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AMERICAN BEE JOURNAL.

MARCH

1916

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**Beekeepers' Meeting at Faenza, Province of Bologna,
Italy, September 9, 1913**

(Read "Notes from Abroad")

American Bee Journal



PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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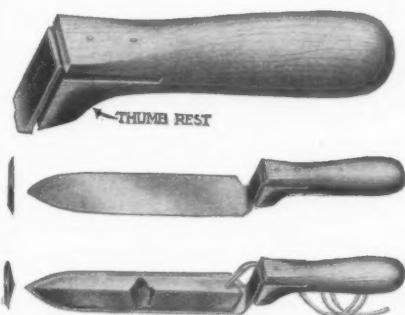
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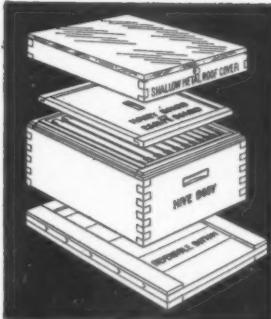
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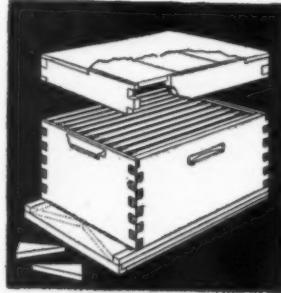
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American Bee Journal

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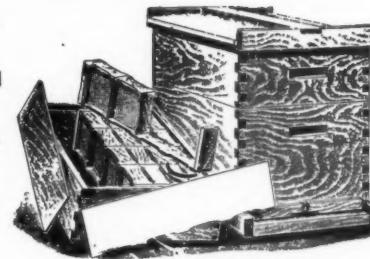
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Wires can not slip. 100
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C. S. ENGLE
Beeville, Bee Co., Texas

The Beekeepers' Review

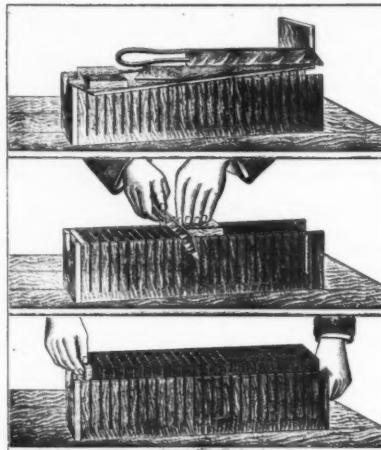
The Review is now owned and published by the beekeepers themselves; in fact, it is the honey producers' own magazine, wholly devoted to their especial needs. We buy supplies for our subscribers, and help them to sell their honey without cost, there being a department where names of those having honey for sale are listed free of charge. Also, if you have bees for sale, there is a department where we list you without a cent's cost. If you want to buy honey, there is a department where you can be listed without charge. Other departments contemplative. If you have beeswax you want made into foundation, we save you money on that. The fact is, the Review's main object of existence is to help its subscribers. As we own it ourselves, why shouldn't it be?

We are just making a special offer to new subscribers, in as much as we are giving away the last eight months of 1914 to all new subscribers for 1915. Those back numbers contain many valuable contributions not found in any other publication. Just listen to a few, not having space here to mention them all: Beginning with the May number Mr. Adrian Getaz gives his experience on preventing swarming; size of entrance to use; home rearing of queens; short cuts in finding queens and other subjects. You should read this. Then there is a two-page article by Wilder, describing his management of 3000 colonies in so yards. The fact is, there are nine articles from Mr. Wilder in those back numbers and more to follow. Those articles are not published in any other magazine. You should read them. Then there are several articles from Pearce, telling of his system of managing bees in the production of comb honey without swarming, with only two visits a year. Would you like to know how it is done? Then there are field notes from Michigan, Tennessee, Iowa, Colorado, telling of things done under different conditions. Those will interest you. Then there is the Secretary's corner; there the National Secretary tells his experience, and "boosts honey." These are just a few of the good things you will receive for your dollar by subscribing for The Review. Besides all this, you will get ALL the fine articles written for the National convention at St. Louis in 1914, and during this year all the papers read at the Denver meeting this month will be published in The Review, and nowhere else. The Review is mighty fortunate in having so much available material in sight. You cannot know too much about your business, and these 20 numbers we are offering you for a dollar will help you wonderfully in your future beekeeping. Address your own paper.

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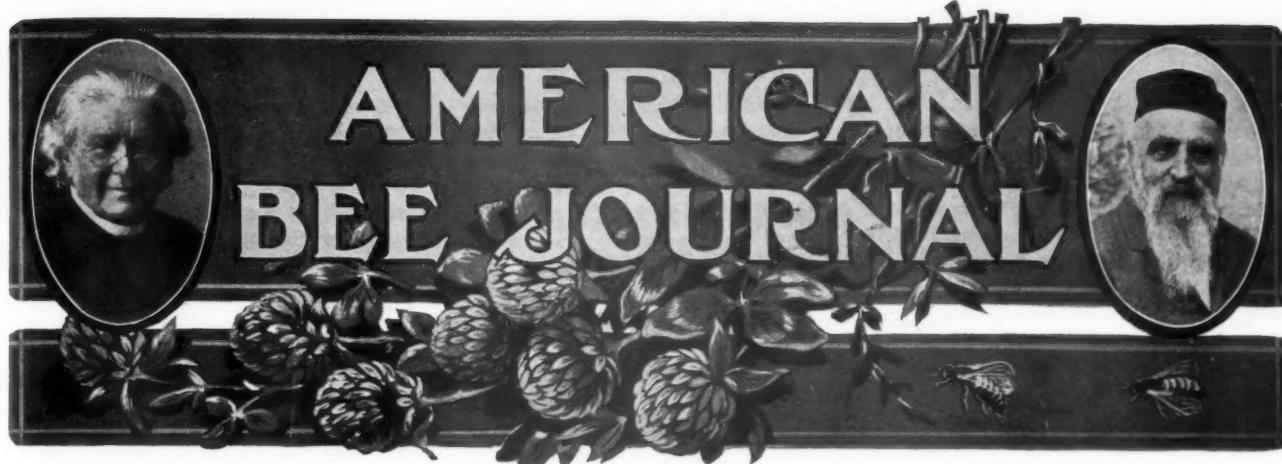
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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., MARCH, 1915

Vol. LV.—No. 3

EDITORIAL COMMENTS

European Foulbrood

While attending a beekeepers' convention in Ontario last year, I met Mr. Irving Kinyon, of New York State, who spoke about having had extensive experience with European foulbrood in the apiaries of Mr. P. H. Elwood, some years ago. Mr. Elwood, who was president of the National Association when I was its secretary some 25 years ago, is one of the largest, if not the largest, among the producers of honey in the world. His experience on bee subjects is therefore interesting and valuable. We secured an article from his pen, which appears in the contributions this month. It is the more worthy of attention because Mr. Elwood does not seek publicity and modestly disclaims any positive knowledge. He simply tells what he has experienced on a very extensive scale.

Equalizing Colonies

Some of our practical beekeepers disagree upon the advisability of helping middling or weak colonies with brood from strong and populous hives in spring.

We believe there are good arguments on both sides. Is it not a mistake to give help to a colony whose queen is of little or no value, and which will probably not be worth anything until the queen is exchanged?

On the other hand, if we have a prolific queen in a weak colony which is struggling to make some headway, is it not possible to make this colony

valuable by giving it a comb of hatching young bees in time for the active season of laying?

Much depends upon whether we have time to give the weak colonies a little attention. We must also beware of giving young brood too early or in very cool weather to a weak colony, as it may not be able to take care of it.

Some people prefer to unite weak colonies to others in the spring. It is well if they have no queen, or if the queen is worthless. But uniting decreases the number of our colonies, and sometimes an apparently weak colony may show good results if it is only given help at the proper time.

Texas Foulbrood

The January number of the Southern Texas Truckgrower's Journal, contains an article by Mr. E. G. LeStourgeon, of San Antonio, appealing to the beekeepers of Texas, to urge the need of an appropriation for bee inspection work. We trust this may be successful. Mr. LeStourgeon is a large producer and is fully acquainted with the dangerous possibilities of a spread of foulbrood in Texas. The Texas beekeepers should act in unison.

Honey Plants and Their Value— Honey Weather

At the suggestion of an editorial in the April, 1914, number of the American Bee Journal, page 116, Dr. L. H. Pammel, State Botanist of Iowa, has undertaken an exhaustive study of the

different honey plants, whether useful crops or weeds. A circular has been sent to beekeepers throughout Iowa. Thinking that we might help a little in this work, by referring it to a number of leading honey producers, we sent a request for answers to these questions to some 25 large honey producers or investigators. 19 of them have replied, and we here give a synopsis of their answers. Ten of them live in Iowa, 5 in Missouri, and 4 in Illinois. The replies are probably a fair representation of the views of the apiarists of the Upper Mississippi Valley concerning honey plants, both wild and cultivated, and their value.

During what months of the year is honey production most plentiful? Thirteen show crops lasting from early June until late September, with an intermission either in July or August. Five have only one crop, lasting through June and July.

What kind of weather seems most to stimulate nectar production in plants, and what is the effect of high or low temperature, rain fall or drouth on the amount of honey produced? Sixteen answers give warm moist weather, with electrical disturbances, one wants clear and bright weather, one medium dry. Nearly every answer favors high temperature as best, 80 to 100 degrees. Two men hold that below 70 degrees and above 100 the flow decreases. Several report occasional crops in cool weather.

What is the effect on the quality of the honey? Honey is thicker and ripens better in high temperatures. Dry air is best. Rain washes the blossoms and causes a production of thinner nectar. Slightly cloudy weather makes more honey. Clear weather makes better honey.

What relation have you noticed be-

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tween the soil on which the plants grow and the quality or amount of honey produced? Three prefer a clay soil. Two want a rich soil. Two say that Spanish-needles need rich moist land. Two want clover on high land. Two on low land. Two say that any soil is suitable which is suitable to the plant. The others have no choice.

What is the relation of the distance apart between the hives and the plants and the amount of honey produced? The consensus of the replies is that the farther they have to go, the less is the amount of honey gathered. One mile good, 2 miles fair, 3 to 4 miles poor. One man says it depends upon the weather. One man's bees fly over a part of the city of St. Louis and across the Mississippi and fill their hives, traveling over 2 miles.

What is the usefulness of bees in the production of fruit and seeds? Eight say that bees are a great aid, that there is no fruit when bees cannot work on the blossoms. Two report that clover fields, close to large apiaries, far outyield other fields in seed production. One reports fruit trees entirely barren until bees were secured.

Have you experienced injuries by bees to fruits? Seventeen say: Not if the fruits are sound. Grapes and peaches are easily damaged by wasps and birds.

The planting of what farm crops do you recommend, and what garden plants and trees? Seventeen alsike, 15 sweet clover, 9 buckwheat, 6 white clover (white clover being volunteer), 5 alfalfa, 2 red clover, 1 mustard, 1 cow peas, 1 Indian corn, 1 catnip, 1 spider plant, 7 fruit trees, 1 gooseberry.

What shade and ornamental trees? Seventeen basswood, 7 maples, 6 black locust, 3 willows, 3 box elders, 2 elms, 1 cottonwood, 1 honey locust.

What apiary problems would you suggest as most important for investigation by the experiment station? Four foulbrood eradication, 3 swarm prevention, 3 how to get strong colonies early, 2 queen selection, 1 cost of production of beeswax, 1 wintering, 1 cause of European foulbrood, 1 securing shorter corolla in red clover, 1 testing hives of different sizes, 1 solving the marketing problem. Also testing sweet clover for soil treatment, testing foreign honey plants, finding some honey plants that will bloom from midsummer until frost.

In the list of honey plants under the three groups of: 1 especially important, 2 furnishing an appreciable amount of honey, and 3 visited by bees

but of negligible production, the following votes were cast for each plant named:

	Pol-	slen
White clover (<i>Trifolium repens</i>)	14	4
Alsike clover (<i>Trifolium hybridum</i>)	14	4
Basswood (<i>Tilia americana</i>)	12	7
Spanish-needles (<i>Bidens aristosa</i>)	10	4
White sweet clover (<i>Melilotus alba</i>)	9	4
Smartweed (<i>Polygonum pensylvanicum</i>), also called hearts-ease	8	5
Dandelion (<i>Taraxacum officinale</i>)	8	6
Lady's thumb (<i>Polygonum persicaria</i>)	5	1
Blackberry (<i>Rubus sp.</i>)	3	3
Willow (<i>Salix sp.</i>)	3	7
Yellow sweet clover (<i>M. officinale</i>)	3	4
Catnip (<i>Nepeta cataria</i>)	3	6
Aster (<i>Aster sp.</i>)	3	4
Apple (<i>Pyrus malus</i>)	2	9
Black raspberry (<i>R. occidentalis</i>)	2	6
Plum (<i>Prunus sp.</i>)	2	5
Garden cherry (<i>Prunus cerasus</i>)	2	5
Coral berry, buckbush (<i>Symporicarpus occidentalis</i>)	2	5
Willow herb (<i>Epilobium angustifolium</i>)	2	2

The following plants were each given one vote in the first group and a number of votes in the second and third group: Soft maple, hard maple, pear, Indian corn, red raspberry, horsemint, common milkweed (*Asclepias syriaca*), nodding smartweed (*Polygonum latifolium*), wild black cherry, gooseberry (garden), black mustard, motherwort, large goldenrod, wild parsnip, butterfly weed (*Asclepias tuberosa*), red bud, stinking clover (*Cleome serrulata*).

The following were classed in the second and third list with 7 to 2 votes in the second list: Buckwheat, Misouri gooseberry (*Ribes gracile*), strawberry, red clover, boneset, sunflower, pumpkin, hawthorne, ironweed, verain (*Verbena stricta*), prunella, alfalfa. The last named is mentioned as rarely yielding honey in this region.

The following are considered as indifferent honey producers, with one vote each in the second group: Melon, grapes, dogwood, elder, smooth goldenrod (*Solidago serotina*), choke cherry, figwort, Juneberry, swamp milkweed (*Asclepias incarnata*), black haw, red currant.

The following are placed only in the third column: Rape, partridge pea, buckthorn, hollyhock, mallow (*Malva*), Indian hemp, whorled milkweed (*Asclepias verticillata*), redberry elder, Canada goldenrod, fleabane, rosin weed, bachelor button, cucumber, box elder, tulip trees, honeysuckle, mignonette, wild senna, flax, borage, hedge nettle, pennyroyal, snowberry, purple cone flower, tickseed and wild cucumber.

The following are mentioned for pollen alone: Charlock, sweet alyssum, stinkweed, mountain mint, elm, huckleberry, walnut, cottonwood, oak, hickory, poppy.

Red clover is mentioned as irregular in its yield, owing to the length of its corolla. The Italian bees are credited as working best upon it. Alfalfa is not

a reliable honey plant in either of these States. Linden is irregular in its yield. The different persicarias seem to be confused under the name of hearts-ease, which is not accepted by botanists. Several of the genus polygonum are reported as equally good honey producers.

The pollen-producing qualities were overlooked by several of the writers. Otherwise there would be a still better appreciation of this function. It is noticeable that only a few plants are regarded as not furnishing pollen to bees.

It would be interesting to ascertain what the verdict would be if this matter was submitted to a greater number of men.

Honey in Dentistry

In Egypt, 3427 years B. C., the "Papyrus Ebers" gave for toothache a prescription composed of equal parts of the fruit of the doom-palm, green lead and honey.

Rhazes, an Arabian physician, advised filling carious teeth with a cement composed of mastic and honey.

Attempted Legislation

In the House of Representatives of Idaho, a bill was introduced against bees as follows:

"No person, firm, association or corporation shall locate or maintain any hive or colony of bees within 100 yards of the property of any person, firm, association or corporation without first obtaining written consent of such property owner."

"Any person or firm, corporation or association violating the provisions of this act shall be deemed guilty of misdemeanor."

The member introducing this bill is not aware of the court decisions long ago passed against such legislation. On June 22, 1889, the Supreme Court of Arkansas decided that:

"Neither the keeping, owning or rearing of bees is in itself a nuisance. Bees may become a nuisance in a city, but whether they are so or not is a question to be judicially determined in each case."

Honorable George W. York, the former editor of the American Bee Journal, is a member of the Legislature of Idaho, and he helped see to it that this law was not put upon the statutes of Idaho. Even though the law were void, it might have been the cause of unpleasant and expensive litigation.

Kinds of Queen-Cells

Examine the combs in a bee-hive, and they will be found consisting



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almost altogether of six-sided cells of two sizes; the great majority being worker-cells, measuring five to the inch. If the bees have been allowed their own way, there will also be a considerable number of drone-cells, measuring four to the inch. At the place in a comb where the bees change from worker-cells to drone-cells, there will be found a few cells more or less irregular in size and shape, called accommodation cells. Beside these there will be found, at least at times, a fourth kind of cells, circular instead of hexagonal, and measuring about three to the inch, called queen-cells.

Our present theme is the queen-cell, concerning which the beginner does not always have the clearest information, and indeed those counted authorities are sometimes in error, as when it is said that three worker-cells are blended into one to form a queen-cell.

If we consider the forms of queen-cells, they may be divided into two classes, pre-constructed and post-constructed. A pre-constructed cell is one constructed as an empty cell, an egg being deposited in it after it is built, or at least partly built. Its bottom is such as might be formed by pressing into some plastic material a marble one-third of an inch in diameter, the marble being pressed in half its depth.

A post-constructed cell, when carried to completion, that is, after it has been built out in full and sealed, cannot be distinguished from a pre-constructed one, although in general the pre-constructed one may average a little larger and be a little more fully decorated on its surface than a post-constructed one. But tear away the cell and examine the base, and you will find a radical difference. As already said, the base of a pre-constructed cell is one in which would fit a marble, while the bottom of a post-constructed cell will be found to be nothing more nor less than a worker-cell.

It is not difficult to watch the progress of a post-constructed cell. Remove the queen from a colony which has not already started queen-cells, and within 24 hours you will be likely to find several worker-cells whose mouths are slightly enlarged, the outer edge of the cell-walls appearing to be pressed outwards and changed into a circular instead of hexagonal form. The occupant of the cell will be a young larva—rarely an egg—and as the work progresses the part that was originally a worker-cell becomes filled with the royal pap, and the larva is crowded out into the later constructed and larger part of the cell. The post-con-

structed cell is appropriately so called because all that distinguishes it as a queen-cell is built *after* the cell has been occupied as a worker-cell; while in the case of a pre-constructed cell the cell is plainly started as a queen-cell *before* there is any occupant.

A post-constructed cell is probably never built when a normal queen is at liberty in the hive; and just as certainly a pre-constructed cell is never built in a queenless colony.

Sometimes queen-cells are classed as swarm cells and supersede-re-cells; but the line of demarcation between the two classes is none too distinct. Swarm-cells are those found present when swarming occurs, and supersede-cells when the bees supersede their queen without swarming. But there is no visible difference between a swarm-cell and a supersede-cell, and it is doubtful that there is any invisible difference. The difference consists in the different uses made of the cells, and there is nothing very fixed about that; for a cell seemingly intended as a swarm-cell may become a supersede-cell, and *vice versa*.

When a colony prepares for swarming, a dozen swarm-cells, more or less, will be started and occupied. If all goes well, swarming is likely to occur about the time the first queen-cell is sealed. But if, about that time or a little sooner, circumstances become unfavorable for swarming, such as the drying up of all nectar or continued unpropitious weather, then swarming will be given up, and if the ruling queen be young and vigorous all queen-cells will be destroyed. But if the queen be old or in any other way unsatisfactory, then the first hatched virgin will be allowed to supersede the old queen, all other cells being destroyed. Thus the cells originally considered swarm-cells have become supersede-cells without any change whatever in the cells themselves.

When the beekeeper accidentally or intentionally kills a queen, the bees will promptly start cells to rear a successor, and these cells may properly be

considered supersede-cells. But if this occurs with a strong colony at swarming time, the chances are that a swarm will issue, the supersede-cells thus becoming swarm-cells.

Left to its own devices, a colony will rarely be found with post-constructed cells, since it probably rarely happens that a queen is killed in a colony unmolested by the beekeeper.

While the difference between a swarm-cell and a supersede-cell is something that even the most experienced cannot decide by inspection of the cells, yet it is at times important to make such decision. In a certain colony queen-cells are found, let us say. If they are intended for swarming, it may be desirable to destroy them in the effort to prevent immediate swarming. If, on the other hand, the cells are intended for supersede, then it may be best to leave them. By no possibility can the beekeeper decide from the appearance of the cells, nor indeed can he make a positive decision in any other way, but attending circumstances will usually enable him to make a pretty fair guess. Three factors help to make the guess: The time in the season, the number of cells, and the age of the queen. If it be out of the usual swarming time, if only two or three cells are started, and the queen be old, it is a very safe guess that supersede is intended. At the usual swarming time, if a dozen cells or so are found, with a vigorous young queen, then it is morally certain that swarming is in contemplation. It should be said, however, in passing, that the number of cells started for swarming varies greatly with the kind of bees. Cyprians, for instance, may start 50 or more cells.

These three factors may be combined in such a way as to make the guess more difficult. The number of cells is probably the most reliable factor. If only two or three cells are found at a time when they are well advanced, then it is a very safe guess that no swarming is intended.

C. C. M.

MISCELLANEOUS NEWS ITEMS

Massachusetts Convention of Beekeepers and Apiary Inspectors.—This convention was held at the Massachusetts Agricultural College, on farmers' week, March 15, 16 and 17. Programs and information can be had at the Extension Service of the college, at Amherst. The inspectors' special meeting on the third day, will be open to all.

In addition to the convention, displays and demonstrations of aparian implements will be special features. A

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large attendance of leading beekeepers is anticipated.

Listed below are the titles which have so far been received for the inspectors' conference. The authors have in every case expressed their intention to be present:

"Methods and Duties of Inspectors"—A. W. Yates, Inspector, Hartford, Conn.
"Resistance of Races, Variety and Strain of Bees in European Foulbrood Suppression"—John Shaughnessy, Inspector, Stockbridge, Mass.
"Combating European Foulbrood; Methods of Control and Suppression"—N. D. West, Inspector, Middleburgh, N. Y.
"Combating American Foulbrood"—O. F. Fuller, Inspector, Blackstone, Mass.
"Methods and Duties of Inspectors"—A. C. Miller, Inspector, Providence, R. I.
Mr. F. W. L. Sladen, of Ottawa, Canada, and Dr. E. F. Phillips, of Washington, D. C., will be present.

National Meeting.—The National delegates met at Denver as announced Feb. 16-18. About 100 beekeepers attended, and an enjoyable time was reported. They were royally entertained by the Colorado Honey Producers' Association, who looked after their welfare and tendered them a banquet.

Professor Burton N. Gates was re-elected president, and Frank C. Pellett vice-president. Wesley Foster was elected secretary-treasurer. The Board of Directors for the ensuing year is: E. G. Carr New Jersey, E. J. Baxter of Illinois, J. H. Stoneman of Idaho, E. D. Townsend of Michigan, and Geo. Williams of Indiana. The voting force was represented by 16 delegates. The Executive Committee was instructed to dispose of the Review. The articles of incorporation under the Illinois law were adopted.

We hope to publish a photograph of the meeting in the near future.

Beekeeping in Idaho.—We are in receipt of a copy of the annual report of C. K. Macey, State Horticultural Inspector in Boise, Idaho, to the Governor of that State. Bee inspection in Idaho is under the supervision of the State Horticulturist. We quote as follows from the special report on bees:

Number of apiaries inspected.....	797
" diseased apiaries found.....	155
" colonies inspected.....	21,742
" diseased colonies found.....	1,230
" colonies treated.....	830
" destroyed.....	405
Total number of colonies (estimated).....	70,000
Total honey production, lbs. (estimated).....	1,555,000
Value of honey crop (estimated).....	\$125,000
Shipments of honey out of State, cars, (estimated).....	30

The year just closed has not been a favorable one for the production of honey, due largely to the frost injury which was experienced the early part of June in many of the honey producing sections. The total output, however, and value of the crop, is practically the same as for the year 1913.

I desire to again call attention to the importance of this industry, not only from the point of production, but also from the indirect benefits to the agricultural and horticultural interests of the State resulting from the presence

of the honey bee at blossoming time. The success of the fruit grower depends very materially upon this agency, and it is also a very essential element in so extensive alfalfa and seed growing sections. The industry should be encouraged, not only for its direct value, but in the interest of the fruit growers and farmers throughout the State.

The Ohio Meeting.—The annual convention of the Ohio Beekeepers' Association was held in Columbus, Ohio, Jan. 11 and 12. Although not attended by a large number of the members, a great amount of interest was manifested by those present.

Among the many resolutions was one recommending that the National Association, at their next convention, adopt rules setting forth the standards for the various queens, so as to get a greater uniformity in breeding.

It was also decided to make an association exhibit at the State Fair, where there will be given out honey recipe books and a list of all the members of the association, and if any members have honey for sale this will be indicated together with amount and kind.

Mr. Fred Leininger, of Delphos, Ohio, was elected president for the ensuing year, and the present secretary re-elected.

E. R. KING, Sec.

Athens, Ohio.

Numberless Species of Bees.—In his "Manual for the Study of Insects," Comstock tells us that, "Not only are insects numerous when we regard individuals, but the number of species is far greater than that of all other animals taken together. The number of species in a single family is greater in several cases than the number of stars visible in a clear sky." We must then not be astonished when reading the following, taken from a German work and supplied by our friend, F. R. Bartsch, of Chicago :

The noted mellitologist, Dr. H. Friese, mentions not less than 777 species of bees found in the region of Africa, south of a line drawn from Senegal to Abyssinia. Fifty-three are for the first time described in his book, "The Bees of Africa," recently issued in Jena, Germany. A number of maps show the range of some of the more characteristic genera of bees, both in Africa and in other parts of the world. The number given by Friese for the apifauna of various countries are interesting.

Germany is credited with 440 species; Hungary, 510; Tyro, 380; Great Britain, 200; Sweden, 212; Algiers, 413, etc. Of the number (8000) of bees described, 2000 belong to Europe. The Ethiopian region has, therefore, with about 1200 species, a much poorer apifauna than Europe. The author states that bees are not really tropical insects, but have their optimum area of specification in the north temperate zone.

After examination, it is shown, moreover, that a very large proportion of the genera and species must have

originated from the palearctic region, the most southern line of which is given by the Mediterranean and part of the Red Sea. Around the Kilimanjaro and Meru we find still at altitudes of 3000 metres (about 10,000 feet), some purely European forms of Halictus, and a species of Andrena (*A. africana*), which is very similar to *A. helvola* of Central Europe. A similar emigration has apparently taken place from the Mediterranean into the Congo basin.

Dr. Hans Brauns discovered a parasitic species (*Eucondylops konowi*) in the nests of the remarkable bees of the genus Allodape. The latter is found over the Indo-Malayan region, Sunda Archipelago, New Guinea and a part of Australia, but is represented by the greatest number of species in the southern half of Africa, which must therefore be taken as its true home.

Brauns found that the species of the Allodape do not make cells and store their provisions with food for the larvæ; the pupæ and callow bees are all found together simultaneously in the same cavity of a hollow twig. The larvæ have extraordinary foot-like appendages with which they hold the food given them, and they are fed until maturity. It is interesting to know that the parasitic Eucondylops is very similar to its host Allodape, thus showing close relationship.

According to Friese, the Ethiopian apifauna is very rich in certain genera, which are not so well represented in many other parts of the world. The social bees of the Ethiopian region comprise 29 species of Trigona, the honey-bee and four of its sub-species and varieties, Apis Mellifica, *A. unicolor*-adansoni, *unicolor*-intermissa, *unicolor*-friesei, and the typical *unicolor*. The bumble-bee (*Bombus*) is not found in the Ethiopian region, although it is known to occur in tropical South America.

New Jersey Beekeepers' Association Meeting.—The meeting of the New Jersey Beekeepers' Association was held at New Brunswick, in the Entomology Building of the State Agricultural Department, on Jan. 13 and 14, as previously announced.

Owing to heavy wind and rain on the days preceding the meeting, the attendance was smaller than last year. However, it was more of a get-together meeting than might have been, had the gathering been larger. It is now expected to hold two summer meetings this season, so as to extend the influence of the association more widely.

An effort to frame a law to control the moving of bees and used apiary material into the State was endorsed, and it is hoped to get it acted upon during this session of the legislature.

The advisability of bottling water-white honey was discussed, and universal sentiment appeared to be against it, but in favor of blending so as to secure a standard amber color which can be supplied year after year.

The papers read were of unusual interest, and the talks by Dr. Headlee, State Entomologist, Mr. Carr, secretary-treasurer, State Inspector, and others were most instructive and interesting. W. W. Case read a paper en-

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tituled, "Reminiscences," which pleased those present immensely.

Dr. E. F. Phillips, of Washington, D. C., being an honorary member, was delegated to represent the association

at the National meeting at Denver.

The 1914 officers were re-elected in a body. President, C. H. Root, Red Bank; secretary-treasurer, E. G. Carr, New Egypt, etc.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Wonderful Tales

The wonderful tales related in the November number were the occasion of the following note:

"DEAR MISS WILSON:—Your article on 'Wonderful Tales,' in the November Bee Journal, impels me to send the enclosed:

"You will enjoy 'I moved several hives under the mock orange bushes, and had what I hoped for, an orange-flavored honey,' and 'queen bees bringing from \$5 to \$30 (?) each.'

"Very sincerely yours,

"Another bee woman,
"ELGENIA B. BIXBY."
(Mrs. J. D. Bixby.)

Be it known that Mrs. Bixby is the wife of J. D. Bixby, editor of the Western Honey Bee, official organ of California State Beekeepers' Association.

"The enclosed" was the newspaper story of a girl who begins by saying: "I suppose I am the only girl in the world who ever asked for a hive of bees as a graduation present."

She got her bees, and the story of her career is so rich that it seems too bad not to share it with our readers. She says in part:

"I rapidly increased the number of hives, each one netting me 50 pounds of honey. The old raspberry bushes in our garden gave a distinct raspberry flavor to the honey of the bee-hives nearest them. My customers went wild about it.

This gave me an idea. I moved several hives under the mock orange bushes and had what I hoped for—an orange-flavored honey. These brands were labeled 'raspberry honey' and 'orange honey,' and were so much in demand that they were always sold far ahead of production. All the honey was attractively boxed. This I found no trouble, and, indeed, it was a pleasure, as was all my beekeeping, and the cost was very little.

"Before 'swarming' I always had the new hives ready, and learned to 'swarm' the bees artificially.

"I studied hive making also, finding it economical and easy to make my own hives, the parts coming ready to set up. Artificial wax was used, thus saving the time of the bees for the more profitable honey gathering. Then I learned how to produce 'queens,' and here was my real profit, queen bees bringing from \$5 to \$30 each. I have quite a reputation as a queen raiser, and make a large income in this way.

"Finally one of my friends asked me to lecture before the Friday Morning

Club on 'The Bee and His Interesting Habits,' and that opened another field and one equally enjoyable.

"I now give many lectures on bees before clubs and at schools. Children are taught about this interesting little insect as part of their 'nature work,' while older children are enjoying the bee in history and literature. My greatest success, however, was in being asked to give lessons in beekeeping at the State College of Agriculture.

"I have plenty of time for studying, lecturing and teaching, as the actual work of keeping bees occupies very little time. I have taken up photography so that I can illustrate my lectures and lessons from pictures of my own hives.

"I began rolling up quite a bank account—30 cents a pound for fancy honey, 50 pounds to the hive; queen bees averaging \$30 each; lectures \$25 to \$50."

A Letter from Denmark

"I got the bee-fever last winter to a very high degree, and I decided to buy a piece of land and start an out bee-yard on a larger scale. But for different reasons I did not get it realized last spring, and just as I had got it fully decided and was going to carry it out, the fearful war broke out, and everything was stunned for this year.

"I am owner of 30 hives, of which 20 are in my home yard here in town,

while 10 are in the country. We have never such immense yields as Dr. Miller or as are common in America. Once in a great while a colony may yield 160 pounds, but the average is 20 to 30 pounds. My best colony gave this year 64 pounds. Our main flow comes from white clover and field mustard (*Sinapis arvensis*), a weed that grows in abundance in our oats and barley fields. Later comes alfalfa, and from Aug. 10 to away into September the heather (*Calluna vulgaris*).

"My bees are Italians mixed with Carniolans. Several years ago I abandoned our native black bees; they gather more honey from the heather than the foreigners, but less from the earlier flowers, as they do not breed up as strong or early as these.

"The heather honey is dark, almost brown, quite strong, and of a peculiar flavor, consequently is not much in demand on the market. Besides those four main flowers mentioned before, both alike and red clover and a great profusion of wild flowers grow here.

"We do not use sections; all our honey is extracted and granulated. It is usually of a fine light yellow color and of excellent flavor.

"I read in the October issue that the honey market in America also has suffered from the panic caused by the war, but I am sure not like in Denmark or on our own little Island. (Bornholm is only 15 by 27 miles, and 40,000 inhabitants.) We lie so isolated and yet so near the very edge of a human volcano. Some beekeepers sold their honey at a low price, but now the demand is about normal and also the price. The price of fine ripe honey is 20 to 22 cents per pound.

"ANNA SOMMER.

"Ronne, Bornholm, Denmark, Nov. 6, 1914"

Some of our Scotch friends will probably read with surprise that heather honey is of such character that there is little demand for it. It does seem strange that there should be such a great difference in honey grown from the same plant in different localities. Throughout the continent it is perhaps much the same as described



ANNA SOMMER IN HER APIARY IN DENMARK

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by Miss Sommer in Denmark, while in the British Isles, especially in Scotland, it is of such fine character as to command the very highest price.

We shall certainly hope to hear more from our Danish sister.

Notes from Foreign Bee Journals

Mrs. Louise Schinko, in Bienen-Vater, recommends sticky fly-paper as the best means of getting rid of ants. After a few are caught the rest seem to be frightened away. But if they are frightened from one hive only to attack another the gain will not be so great. But fly-paper may be used to prevent ants from climbing up the legs of bee stands.

Mrs. Barth, replying to a question in Schweizerische Bienenzeitung, says she has kept pinks for 30 years, and never have bees injured the blooms, and indeed she thinks it doubtful that bees ever visit them, although flies resembling bees settle upon them. We have had rosebuds, not full blown roses, badly torn to pieces by the bees in some years. It looks as if they tore them to pieces to get at the pollen not otherwise attainable.

Honey Puffs

One cupful of cream, 3 cupfuls of sugar, $\frac{1}{4}$ cupful of honey, white of one egg, 1 cupful of chopped nut meats.

When the cream and sugar have been boiled without stirring until the threading stage is reached, add the honey. When the syrup will make a soft ball on being dropped into cold water, take it from the fire and beat into it the well-whipped white of an egg. Add a cupful of chopped nuts. When firm and creamy shape into balls.—Country Gentleman.

Honey in Idaho

The "Idaho Club Women" calls Idaho "The land of the honey bee," and says:

"Sixty-seven thousand dollars worth of honey was produced in the Idaho Falls district within the last 12 months.

"The business has reached such proportion that Idaho Falls is now headquarters for the Idaho Honey Producers' Association of 165 individual producers. There is also located here a large corporation engaged in the manufacture and handling of bee supplies, who are heavy shippers of honey, as well as producers of the product on a considerable scale. This industry is a great factor in southern Idaho."

Entering Beekeeping Whole Heartedly

"I wrote you one year ago, telling that I had just purchased a 3-frame nucleus and queen (Italian bees) from Dadant & Sons; also asking questions which you answered in the September Bee Journal. I now have eight thrifty colonies. One of these was an immense swarm of black bees that I caught, and later introduced a splendid Italian queen.

"I find ready sale for my honey right

here at home, as there are very few beekeepers in these parts. I took off my fall honey about Oct. 15, and have very little of it left. I sell it in sealed pint jars, with my own labels. I also bought an extractor, which I know will pay for itself in the spring. With the wax cappings I made vinegar, which was quite nice. All the bits of wax that I managed to rake and scrape I have sold to the shoemaker, as every bit helps.

"I have one colony domiciled in an observation hive, which is surely a source of pleasure to us all.

"I have joined the State and National Beekeepers' Associations.

"The greatest enemy to bees in Louisiana is the bee-moth; it bothers mostly where bees are kept in box-

hives and common bees at that.

"MRS. W. B. HARP.
"Napoleonville, La."

You ought to be congratulated upon the whole-hearted way in which you enter beekeeping.

You do well to cultivate your home market. Right or wrong, people are generally prejudiced in favor of honey produced in their own locality.

There Was a Reason

She drank the fragrance of the rose,
That she held closely to her nose.
Away she cast it; so would you;
She found a bee was drinking, too.

—Exchange.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Montana Beekeepers Organize

The Montana State Beekeepers' Association was organized at Bozeman, Mont., Jan. 30, 1915, with a charter membership of 20. Dr. Gopenhafer, of Helena, was elected president; Mr. Bell, of Elso, vice-president; Percy F. Kolb, of Billings, secretary-treasurer; and B. J. Kleinhesselink, of Big Timber, and S. F. Lawrence, of Hardin, as members of executive committee.

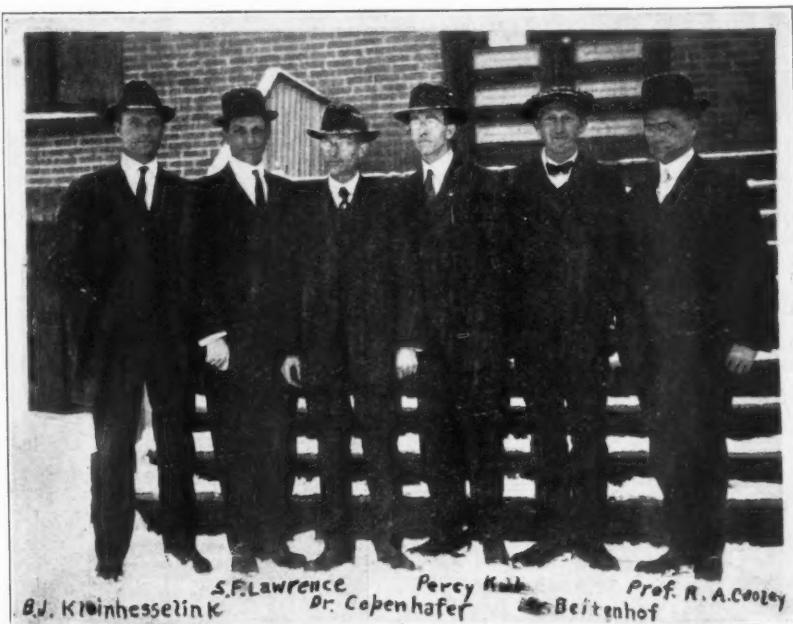
Through the efforts of Prof. R. C. Cooley, State Entomologist, the services of the writer were secured for six short course lectures on beekeeping. The lectures were attended by from a dozen to 30 at the different ses-

sions. The evening illustrated lecture, "Beekeeping Among the Rockies," was attended by about 250.

Each afternoon a round table discussion was held which brought out many interesting points.

A legislative committee was appointed by the president to work for the passage of an apiary inspection bill that was drawn up by Prof. Cooley and the committee. The bill, as drawn, combines the most valuable features in a number of inspection laws, especially the Texas law. Those present were quite hopeful that the bill could be put through the legislature.

The secretary-treasurer, Percy F. Kolb, was instructed to begin negotia-



Some of the Montana beekeepers who were influential in organizing the Montana Beekeepers' Association at Bozeman Jan. 30, 1915.

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tions for the cooperative purchase of bee supplies. It was thought possible that a carload might be purchased.

The association adopted the standard, $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$ inch section as the standard for the association, and also the double tier shipping case.

It was interesting to note that the majority are using the 4×5 plain section; but realizing that uniformity will be necessary when carload shipments of comb honey are to be made, which will be very soon, they voted unanimously for the standard section. Some of the members will begin at once to change their equipment.

The Montana association voted to affiliate with the National Beekeepers'

Association, and elected Mr. S. F. Lawrence delegate and Percy F. Kolb alternate to the National convention in Denver.

The Montana association starts off under very auspicious circumstances. It is made up of men who are bound to make a "go" of it and do much for Montana beekeeping.

One provision that will help out the treasury of the association is that the executive committee may assess each member up to 5 cents per colony each year. One cent per colony was assessed at organization, and paid in as a protective fund. This assessment can be used only for special protective purposes.

sale sugar feeding. I would gladly feed none at all if always sure that the honey was all right, but experience has taught us that in our northern sections properly made sugar syrup is the very safest food that can be given to bees for wintering. This year the great majority of our bees have no sugar syrup stores, and I fear we will regret it before spring.

As an instance that the bad effect of feeding good syrup in the fall in large quantities, is insignificant, I will cite the case of one our very best known beekeepers in Ontario. He runs hundreds of colonies, and always manages so that in the fall the brood-nests have very little honey. He feeds every colony about 20 pounds of sugar, which means 30 pounds of syrup for winter stores. He has averaged that amount to each colony every fall for at least 15 years, and I would like to take the two professors to these apiaries at any time of the year, and ask them to detect any kind of weakness in these bees, caused by the heavy sugar feeding. This man is one of our best winterers *always*; and his crops are probably second to none in the province.

I feel positive that *early spring* feeding of sugar syrup rapidly tells on a colony, but as for fall feeding, the man in our country who follows the practice is the one who will come out ahead in wintering, one season with another. Nothing is better than *good honey* for wintering, but, unfortunately, we often get some honey in the hives that will cause trouble every time in places where no flight is possible from Nov. 1 until late in March, as is often the case here.



SEVENTY BEEKEEPERS AT THE LUNCHEON GIVEN BY THE COLORADO HONEY PRODUCERS' ASSOCIATION AT THE AUDITORIUM HOTEL, DENVER, DEC. 29.

CANADIAN BEEDOM~



Conducted by J. L. BYER, Mt. Joy, Ontario.

Dysentery Shows First in Italians

Bees are wintering none too well here, and many colonies living on natural stores are in need of a flight. Sorry to have to say so, but as usual in our apiaries the Italians are the first ones to show signs of dysentery when poor stores are in the hives.

Much Snow But Nice Weather

We have had nice winter weather for the past month, and to date, Feb. 9, we have not had nearly as severe weather as last year. There is a large amount of snow, which will be good for the clover; in fact, we have probably more snow on the level than for a number of years. I say "on the level" because, as a rule, since the forests have been cut down our snow lands in the roads

and other places where buildings and fences catch it as the wind drives it along.

About two weeks ago we had over a foot of snow at one fall, and right after it a light rain. This froze and formed a thin crust that ended chances of drifting.

Is Fall Feeding of Sugar Syrup to Be Discouraged?

Professors Jager and Bartholomew may be right as to the effect of sugar feeding, page 53. In fact, they must be right or they would not make the claim they do. But I insist that the bad effect of feeding sugar syrup to bees in the fall, even feeding lots of it year after year, is so small as to be only noticeable to a scientist. I do not wish to pose as a defender of whole-

Spreading Frames for Wintering

Mention is made on page 66 of taking one comb out of a brood-nest for wintering and spreading the remainder further apart. H. G. Sibbald takes two frames out of a 10-frame hive before feeding heavily for winter. The eight combs are "bulged out" so that only the regular space is left. In the spring he gradually forces these combs back into normal position, and the bees remove the stores to get the proper space again.

The fact that he does this work and says it is all right makes it safe to try, for Sibbald "does things." When the bees are making room between the combs at the top, they move the stores, and "stimulation" of the best kind is provided.

That Iowa Report

Our thanks are due to Frank C. Pellett for a copy of the inspector's report and proceedings of the Iowa beekeepers' convention. I think this is the best effort in that line that I have yet seen, and is well worthy of the State it represents and of the men who were instrumental in its publication.

Best Wishes to Former Editor York

Pleased and surprised to learn that our mutual friend, George W. York, is now State Representative for Idaho. Not "surprised" because I did not think

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he could fill such a position with honor to the State, but because I did not know he was running for office. A personal letter from him at Boise, reminds me of the many friendly chats we had by letter when he was editor of this Journal, and of the good time at Detroit when we "bunked" together for three nights during convention. Our best wishes go out to him in his new field. I feel sure that hosts of readers of the American Bee Journal will join in these felicitations.

High Board Fences About an Apiary for Protection

An 8-foot fence around an apiary is the subject of a short debate in Gleanings in Bee Culture between the two well known veterans, J. E. Crane and R. F. Holtermann. Mr. Holtermann deems these fences "almost imperative" in places where no other shelter



Byer's "Cashel" apiary; hives facing west—Same direction that the land slopes.



Another Byer apiary. Natural shelter, bush and high land, surround this apiary, with good drainage to the south.

for the bees is available, while friend Crane speaks of a yard being "hopelessly ruined" in the spring because of one of these fences. I hope they will pardon me for thinking them both extreme in their views. I dislike such a fence, and at the home yard I have repeatedly seen hundreds of bees fall on the north side of a board fence during days when the sun was shining brightly and a cold north wind blowing. They would fly to the north side of the fence, the wind would strike them and down they would go.

But I can hardly imagine things so bad, that the apiary would be ruined from this cause. Natural shelters, as orchards, evergreen hedges or forests, are much better, but as Mr. Holtermann says, these are not always available. As to the fences being imperative for wintering, it would be a toss up for my decision. I want some kind of shelter when working at the hives in the summer. Any one who has wrestled with a quilt trying to get it to stay on the hive until the cover was in place, can well understand this, especially if the wind is blowing about 40 miles an hour.

Within three miles of my home is an

apiary that has wintered outside for 30 years or thereabouts, and always win-

ters as well as the most sheltered apiaries. Yet this yard is in a field, exposed to the west, north and south, with buildings on the east. After watching this exposed apiary year after year, I wonder if we do not sometimes over-rate the value of wind-breaks for winter protection. Yet I like a protected apiary for solid comfort, with the hives situated under large apple trees. It is the ideal position.

North Carolina as a Bee Country

A subscriber from England asks, page 64, Feb. 1, whether North Carolina is a good bee country. I have never been there, but my father has "wintered" for two years not far from Asheville, that State, and is there now. He thinks it a beekeepers' paradise. His letters during winter sometimes make me wish I was there, but when the "good old summertime" comes, the land of the Maple Leaf is good enough for me. From what he tells me, the mountain slopes have wonderful bee pasture, and it is undoubtedly a first-class bee country.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

Iowa's Annual Report

We are in receipt of Mr. Frank C. Pellett's Annual Report as Bee Inspector of Iowa. It is a most interesting work, containing besides his personal report, which is excellent, many valuable papers by leading bee-men and working scientists. The Report is beautifully illustrated.

Mr. Pellett urges county inspection of bees in his State. This has worked very successfully in California. It seems but just that the counties of a State that are in need of an inspector should bear the expense, as some

counties have no bees, or so few that there is no need for an inspector. As Mr. Pellett very correctly points out, inspection can be much more thoroughly done in this way. Our county inspectors here make it a rule to look over practically all the bees in their counties each year. Where disease is known or suspected, every colony is looked through, and every comb containing brood.

This method has met with the hearty cooperation of the beekeepers, and where men of average ability to do competent and conscientious work have been appointed as inspectors

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there has been little friction. In this way we have to a great extent stamped out American foulbrood.

European foulbrood is new among us, but so far we are holding our ground. It is of course a much harder "proposition" to handle. We are yet considerably in the dark as to how the infection is carried. Requeening seems about the only thing to do, and it is much harder to get a man to requeen than it is to trap or destroy a few colonies. But we are preaching the doctrine of requeening as hard as we can, and most of our beekeepers are working along that line.

We do not have farmer beekeepers here to any great extent. Almost all of our people are professionals, and are glad to make use of any information in regard to disease and how to combat it. The county bee inspector is in close touch with those whom he serves, and the treating and cleaning up is almost altogether under his personal supervision. In fact, he does a large portion of the actual work in treating and destroying, where destroying is necessary. This is very essential where the beekeeper is either inexperienced or careless.

California, owing to her mild climate, is a continual battle ground between the producers and the myriads of insect and bacterial pests. Almost every known pest attacks our orchards and the horticulturists fight continually to keep them down, and so on through all our productive industries. But the horticulturists, the stockmen and beemen are just as determined in

their warfare as are the numerous pests, and we manage to hold our own, but it is at the price of eternal vigilance. We have horticultural inspectors and live stock inspectors in almost every county. So it was an easy matter to get the supervisors of the counties, where it was necessary, to add a bee inspector to the list.

increased to 200, and at the same time a very good harvest made, if increase is made very early in the season and towards the close, thus holding the bees together as much as possible through the honey flows.

Desires to Locate in Blue Ridge Mountains

"MR. WILDER:—My plans are to locate in the Blue Ridge Mountains and keep bees, and I want to run them on as near a non-swarming and let-alone plan as possible. How would a two full-depth hive body arrangement do?"

"LOUIS A. SCHAFER."

"Fowler, Mich."

You can find suitable locations most anywhere in this chain of mountains, either in Tennessee, Georgia or North Carolina.

The hive arrangement you suggest would be very good for that section for extracted honey, for there are two general honey flows there; the first one coming in early spring from locust and other spring honey plants, and the other one in midsummer from sourwood and other summer honey plants, including basswood. The full depth body would probably make ample storing room for the two flows, for after the spring flow, extracting could be done and the empty combs set back on the colonies to catch the next flow.

The high altitude and the climate in this section would most likely appeal to you.

Cross Bees

"MR. WILDER:—I have a hive of black bees that are so cross that I can't get near them even when they are at work. What should I do with them?"

"Cass Station, Ga. H. C. HAGAN."

Sometimes bees are dangerous on account of their temper. Very often when I was keeping bees in box hives I had such colonies. I greatly feared them, and sometimes would not dare rob them. I had no bee veil or smoker except a roll of cotton rags from

BEE-KEEPING IN DIXIE~



Conducted by J. J. WILDER, Cordele, Ga.

Desires a \$1000 Return from Bees Annually

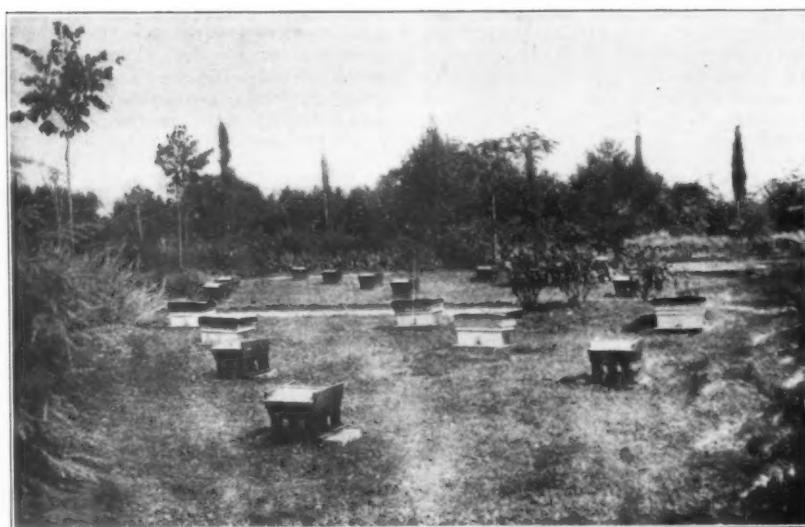
"MR. WILDER:—I want to establish a bee business sufficient to assure me an annual income of \$1000. What should I have? And as a starter should I consider planting anything to increase the pasture? Could I increase two-fold each year until I reached the desired number? And how many bees can an ordinary apiarist care for?"

"Elberton, Ga. O. E. TERRY."

An expert apiarist could handle, with but little if any help, 300 colonies of bees well equipped and well located in five yards in your section, and taking one year with another, could realize an income of \$1000. If the net income were to be that, above all labor, etc., it would take at least 500 colonies in eight yards with full equipment. This would mean a net income over the investment.

An inexperienced man, of course, could not reach this mark with the business. Beekeeping, like all other lines, must be in good hands, and under good management to expect good returns. Do not think of planting anything for your bee pasture; depend en-

tirely on natural honey sources. Yes, bees can be increased twofold each season; that is, 100 colonies in



NUCLEI FOR QUEEN REARING—GAETANO PIANA

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which the smoke had to be blown or fanned on the bees. This seemed to be just enough to enrage them. Besides, they were dangerous when not disturbed. More than once I got vengeance by burning a colony. When my first smoker and veil came I had a colony of such bees in a box hive banished to the most remote corner of my land, in an almost impassable place of brush and briars. I put my veil on, got the smoker in fine trim, and went for this hive. I completely covered them with smoke and gave them a good robbing and left them to do their worst; then I transferred them.

On this little job the smoker and veil were worth far more to me than they cost. In a few days I ordered an Italian queen, and when she arrived I paid this colony another call, killed its queen and introduced the new one, and the furious black bees rapidly disappeared. I had an altogether different colony of bees in color and temper.

Try my plan on your cross colony.

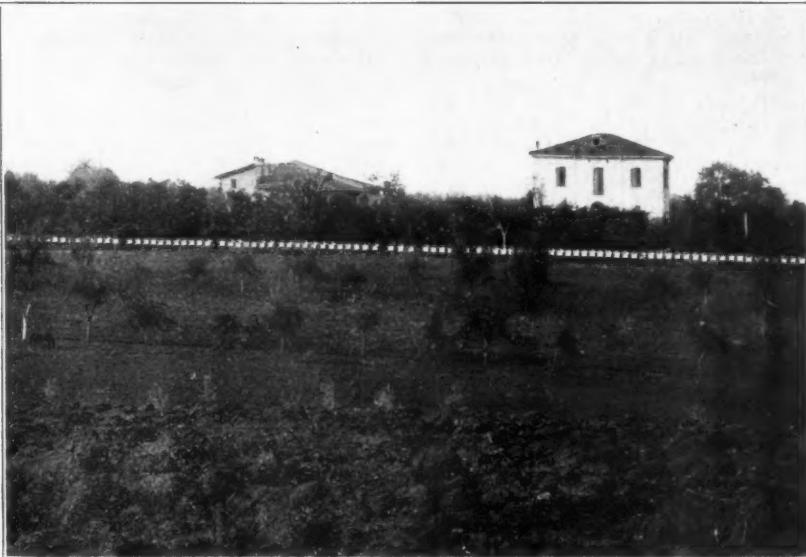
Fears Ravages of Thieves

MR. WILDER:—My bees have done well for a long time, and I now have 100 colonies here, and am thinking of taking 50 colonies to a new location about 4 miles away, near a small town, but no one lives near the location. It is in a wealthy community and they do not want any beekeepers there. I fear damage will be done my bees. Would you move any of them there? Is there any way I can protect them from thieves or keep people from harming them? What should I offer for the location should I decide to move them? Do thieves ever trouble you, and what do you do about it?

"Stanford, Ky. J. M. WARE."

If you expect to make much increase this season, it would be best to move half your bees to a new location. But whether you should move them to the location you have in mind is a question. If it is a very desirable one on account of the great amount of honey plants and convenient to market, you might do so. Be sure the location is on a good and influential man's land, and that he will protect your enterprise on his premises. As to keeping thieves away from your bees, it will be rather hard to do, but signs of warning set up or tacked on trees near the apiary will help some. Watch for them, catch one, make him pay damages in court. This

G. PIANA, BALDUCCI, C. CARLINI, DADANT, PROF. COTINI AT THE PIANA APIARY



HONEY PRODUCING APIARY OF GAETANO PIANA

will stop it for the future.

The land owner should not charge you over \$10 a year for the location, possibly less. Yes, thieves give me much trouble, and we have lots of them who do damage, destroy and carry away honey each season, or carry off colonies and destroy them.

ings. It looked like a church nave. We have no small churches in America so beautifully finished.

The following day we had a great meeting of beekeepers and a banquet, and you should have seen us trying to talk Italian. However, we had a fine interpreter in Mr. Triaca, whom we kept busy answering questions. After the banquet, Count Visconti made a speech in Italian, of which I understood very little, but it must have been finely appreciated, from the applause it drew. Then a photographer came to make a picture of the meeting, which we give, and after that we had an automobile ride. We traveled some 45 miles, through a pretty country, just at the foot of the Apennines, visited four or five towns and several apiaries. The finest apiaries we saw were those of Gaetano Piana, whom I have mentioned in a previous article and of Lucio Paglia. At the Piana home, the mother was much interested in us, because one of her sons, only 17 years old, had left shortly before for South America. It seemed to her as if she

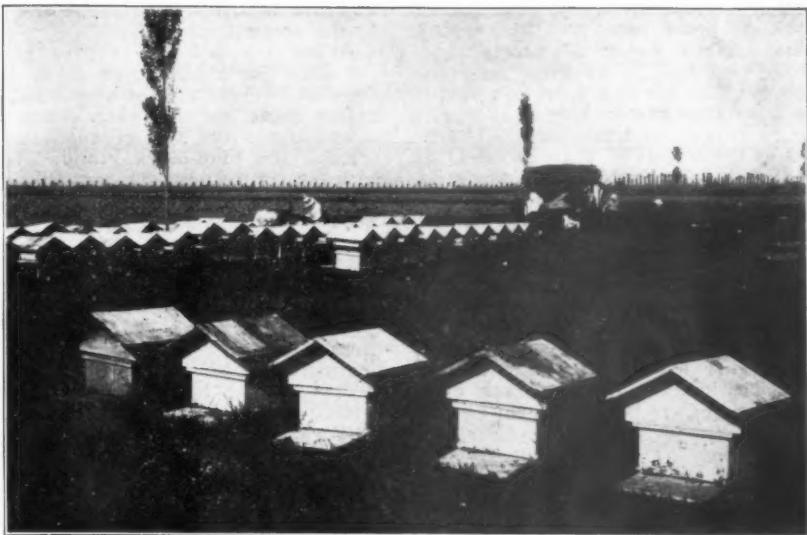
NOTES FROM ABROAD

By C. P. DADANT.

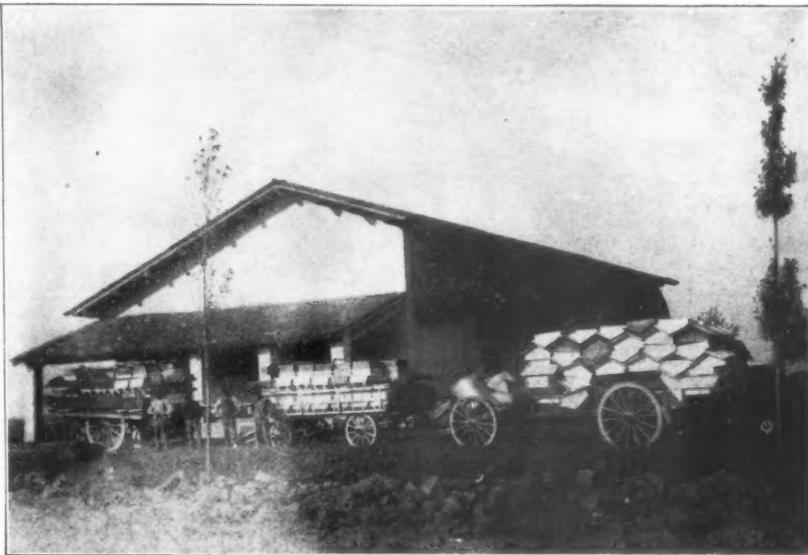
Faenza, our next stop, is the city where the style of pottery called "faience" originated. There are still several factories of this material there. It is a city of only about 13,000 inhabitants. We reached the hotel late in the evening. The pretty, plump, dark-eyed landlady first gave us a very small

room, but when our good friends explained to her what distinguished (?) visitors we were, she broke into a great exclamation, and at once conducted us to what must have been the bridal chamber of the hotel, a large room, with a very high arched ceiling and beautiful wall and ceiling paint-

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ONE OF GAETANO PIANA'S OUT APIARIES



HAULING BEES—GAETANO PIANA

was meeting people who might have known her boy. America seems so distant to most people on the continent that they do not realize how far apart are North and South America.

Mr. Piana, a young man of great activity and teacher of apiculture at the Royal Agricultural School of Imola, has several honey-producing apiaries and one for queen-rearing, the latter with 128 nuclei. We give several photos of his bees. They are located near Castel-San-Pietro, Emilia. So is the apiary of Lucio Paglia, who is an old and experienced breeder and shipper of queens. I was greatly interested in examining the bees, which, as in all other parts of central Italy, are of great regularity. I opened hive after hive without smoke and without angering the bees.

Since coming home, I have had an extensive correspondence with Mr. Piana, and have received a number of fine queens from him. I must say that his shipments were the most successful of any that I have received by mail,

from so great a distance. Were it not for the war which put a stop to all security in the quick transmission of mail, we would have had some very interesting experiences, both with Mr. Piana and Mr. Penna, in testing the mailing of queens across the ocean.

Mr. Piana has also informed me concerning the color of Italian bees throughout Italy and on both sides of the Apennines. There are very slight differences, but the yellow bands are everywhere apparent. The Riviera is the only exception. As to the bees of Sicily, they are of very dark color and as small as the African bees, but reported very peaceable.

Piana introduces his queens into the nuclei, just after they are hatched, with the help of tobacco smoke. Indeed, the use of tobacco smoke seems universal in Europe. I have no desire to commend it, for I do not use it myself, but the fact forced itself upon me. In Germany they sell a special pipe for use in the apiary.

The braula coeca or bee louse is

common in Italy, and I saw several specimens of it. But this was nothing new to me, for I have often seen them on imported bees and queens. They are so large that they cannot fail to be noticed, and are easily removed from the body of the queen. Professor Bovelacci, of Forli, who was with us and whom I will have the pleasure of introducing a little farther along, assured me that the louse is picked up by the bees on such blossoms as the sunflower. His reasons for this statement I do not know. He is a well informed man.

Some of the honey resources of central Italy are similar to ours. They have plenty of alfalfa, which they call "erba medica." The scientific name is "medicago sativa." This appellation is derived from the alfalfa having been originally imported into Europe from Media, in western Asia. They have another genus of the same family which they call "lupinello," a variety of the lupine, much grown in southern Europe, in poor soils to enrich them.

But the best plant of all is the esparto or sainfoin, which they call "sulla" in Italian. It makes the very best hay and the very best honey is harvested from its bloom wherever it grows. Why can we not grow it in America? I have seen it nowhere in this country. Its botanical name, "hedysarum," is derived from two Greek words, "èdus" sweet and "aroma" smell. It is indeed a sweet-smelling blossom. I notice in the latest Gray's Manual that there is a plant of this genus in North America, "hedysarum boreale, Nutt," growing on the shores of Lake Superior, in South Dakota, and the Rocky Mountains south to Colorado. Is any one of our readers acquainted with it and does it yield honey? Sainfoin is more commonly known under the botanical name of "onobrychis sativa," but in Bonnier's "Flore" index it is listed as hedysarum onobrychis. The Italians list it as hedysarum coronarium. I see that it has lately been introduced into



PROF. CARLO CARLINI

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Australia under the name of "soola clover."

The May disease, our "paralysis" is well known in Italy. They ascribe it to cool, moist weather in spring, and inferior honey or bad pollen. This bad pollen theory was suggested in a number of places. The *Nosema apis* appears seemingly as an accompanying feature, not necessarily a cause. The disease evidently becomes endemic at times, as in the Isle-of-Wight case which is but a variety of the same complaint.

In our trip through the country we noticed a peculiar feature of each town, houses built with fine front columns and porticos, so that one may go from one end of a street to the other under porticoes which form a roof over the sidewalk. In a small village we saw a dilapidated palace which served as a blacksmith shop. It had stone columns two feet in diameter, and a Latin inscription five or six hundred years old over the frontispiece.

Some cuts of our visit to the Pienna apiary were published in Gleanings in Bee Culture for April 15, 1914. Through some mistake Mr. Herrod, of England, was reported to have been present. He was not with us.

The next day we were at Forli. Like many other cities of Italy it dates back beyond the Christian Era. These old cities have a style all their own and are very interesting. Here we were the guests of Prof. Ettore Bovelacci, already mentioned. He has volunteered to teach beekeeping to high school children and soldiers, without charge. Many young ladies follow his teachings, and he has already some 200 pupils keeping bees in the modern way, with movable frame hives. His office, right by his apiary, is very pretty and ornamental, see photograph. This is located at his farm, a mile or so from the city.

We found the bees everywhere exceedingly gentle. This was a rainy day, but the bees allowed me to handle them without smoke and without trouble.

In the city we visited a tinner, Mr. Montevercchi, manufacturer of reversible extractors, under a patent of his own. The most interesting feature of his machines is a friction gear instead of cogs, similar to that lately brought forth by the Roots, made of some sort of hardened cardboard. It is absolutely noiseless. The cost of extractors of this kind, in Italy, is between \$20 and \$30. They please me very much, and I doubt that any of our manufacturers make as desirable goods.

When evening came we bade farewell to our good friend, Count Visconti, who had accompanied us thus far, and who was returning to Milan while we continued towards Ancona, with Prof. Cotini. Dr. Triaca had been compelled to leave us a little earlier. We were sorry to part from them, but they had already given us more of their time than was reasonable for us to expect, since they had accompanied us some 175 miles.

As we passed through S. Arcangelo and Rimini we were met at the stations by several beekeepers who had attended the Faenza meeting and had come to bid us Godspeed. Among them was

Signor Carlo Carlini, author of several booklets upon bees and beekeeping. This apiarist, owner of several hundred colonies with his associate Pedrosi, has given a thorough test to the American system side by side with the Sartori or German hives. The result of these tests is that he calls the Dadant hive "la valorosa, la preferita, la classica, l'internazionale, la regina delle arnie" (the valuable, the preferred, the classic, the international, the queen of bee hives). I hope the reader will forgive me for reproducing such eulogy. I promise not to do it again.

What a pleasure it is to find so hearty a welcome! Those Italians are hospitable; they are also fine looking men, with dark hair and black eyes. Many women are beautiful, even among the "contadini" or peasant class, and we are not astonished that the old Italian masters were able to give the world fine paintings and statues. They

had fine models, if we judge the past by the present.

As we reached the shores of the Adriatic, a thunder storm arose from the east. It was almost sunset and the colors made by the white foam that lashed the shore, the greenish angry sea and the blue-black clouds above, with the setting sun shining full upon them, made a picture to be remembered. Beyond that flashing lightning, across the stormy Adriatic, were the then fighting Balkans. It seemed as if the raging elements were trying to give us a clue to the human strife beyond.

At 8 o'clock, we reached Ancona, one of the oldest cities on the Italian peninsula, the birthplace of my father-in-law, and the home of a number of intelligent and thrifty beekeepers. This was the farthest point reached in our travel. We will speak of it in our next letter and then slowly retrace our steps towards home.



THE APIARY OF AN ITALIAN PEASANT—(By Prof. Carlini)



Montevercchi, Prof. Cotini, Prof. Piana,
Mrs. Dadant, Prof. Bovelacci, Count Visconti, Dadant

—At Forli Sept. 10, 1913.

American Bee Journal

CONVENTION PROCEEDINGS

The Washington State Convention

The president and vice-president being absent, the meeting was called to order, and A. E. Burdick was chosen chairman.

Mayor J. F. Barton, of North Yakima, gave the address of welcome. He laid stress on the fact that in the fruit sections of the State bees were a necessity for fertilizing fruit bloom to insure a crop.

Dr. A. H. Henry does not believe that bees carry blight disease unless some other insect puts the germ of blight where the bee goes to get nectar or pollen. If the orchardist will cut out all diseased limbs or parts of trees as soon as blight is visible, there will be no danger from any work the bees may do.

Dr. Henry, at the close of his remarks, suggested that this convention should make some recommendation to the different fruit associations that some preparation be mixed with the arsenite of lead mixture to make it bitter enough so the bees would not work on it, so as to save many bees from being poisoned in the spring.

The convention took the suggestion under consideration.

Mr. Burdick spoke on selling honey, and told of the different methods of selling honey, many of them questionable to say the least; chief of these was by trying to deceive the people by misbranding as to locality from where the honey came, and the source of nectar.

Two papers were read from Prof. Francis Jager, of the Minnesota Experiment Station, one on the Carniolan bee and the other telling what the State of Minnesota is doing for her beekeepers.

The serious problem of having bees and honey stolen from out-apiaries was brought up. The secretary thought the best plan was to form a beekeepers' protective association and assess all members joining, so much per colony as a fund to offer a reward and prosecute the thieves if caught. Some of our members have lost very heavily in bees and others in honey. Nothing definite was done.

Hans Christensen told his method of producing comb honey, and Robert Cissna and C. W. Higgins, who own automobiles for their work, are well satisfied with them as time savers. C. W. Higgins thinks a truck would not be as profitable on account of the extra cost in repairs. One of the best inducements to own an automobile for the beekeeper is in handling bees. There is no danger from bee stings, as is the case with a horse.

A paper from Dr. E. F. Phillips, of Washington, D. C., on his experiments in wintering bees was read.

Papers were read from Editor Dadant on "Feeding Bees" and from Hon.

George W. York on "Honey Exhibits at State Fairs."

The committee on foulbrood law was ready to report, and as we had a delegate in attendance from the Pierce County Beekeepers' Association, we joined hands in framing a law that we believe will be of benefit to the beekeepers at large in the State.

It was moved and carried that the thanks of the convention be extended to Mayor J. F. Barton, Dr. A. H. Henry and to all others who in anyway contributed to the success of our convention.

Election of officers resulted as follows: President, J. B. Ramage, North Yakima; vice-president, C. W. Higgins, Wapato; treasurer, Gus Sipp, East Selah; secretary, S. King Clover, Mabton.

We did not have as many in attendance as at some former meetings, but the enthusiasm and work accomplished was as great as at any of our meetings.

On motion the convention adjourned.
J. B. RAMAGE, Sec.



SCHOOL APIARY OF PROF. BOVELACCI AT FORLI

CONTRIBUTED ARTICLES~

Basswood Planting

BY PROF. G. B. MACDONALD.

BEEKEEPERS well know the value of basswood trees for the production of honey. It should be possible for farmers interested in bee culture to make the basswood trees serve a double purpose. Trees of this species might be utilized for wind-break purposes as well as for the production of honey.

Under good conditions the basswood sometimes attains a height of 70 to 80 feet. The crown of the tree is quite compact, and forms a very dense shade. It is best suited to deep, rich, river-bottom soil and to cool situations. Very often the basswood will be found on the cooler slopes along with a variety of other trees. It is quite hardy, and although it will survive, in many instances, on up-land soil, yet as a general rule it is not advisable to plant this species in dry situations.

The basswood can readily be repro-

duced by seed and by sprouts. The seeds ripen in September or early October. As soon as the seeds are collected they should be freed of the wings and planted at once. The freezing and thawing during the winter aids in rotting and loosening the seed coat and thereby make possible an early germination. Although fall planting is generally recommended, it is possible to keep the seed over winter in a cool, dry place by storing in sand.

The young basswood trees should be grown in nursery rows and transplanted to their permanent location at the age of one year. The trees should be set out as soon as the frost is out of the ground in the spring, and should be given protection from cattle and fire. Cattle, especially, do considerable damage to young trees by eating the small branches and foliage.

Ames, Iowa.

[The above, in answer to a question asked at the Ames meeting, was written by Prof. MacDonald, the Forester

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of the College, and forwarded to us by Prof. Pammel. In addition to these suggestions we will say that where basswood timber has been grubbed out, very often sprouts spring from the remaining roots and produce quick growth. These may be transplanted after they have formed a crown of rootlets. Basswood trees make fine ornamental shade.—EDITOR.]

Large vs. Small Hives

BY J. E. CRANE.

In the September number of the American Bee Journal for 1914, on page 309, is a very able and excellent article by D. Barone, on the value of large brood-chambers, which proves very conclusively the value of large hives. Indeed, I believe he has by no means said all that he might truthfully have said; for he might have added that a large hive required less looking after, was much less liable to get short of stores and less liable to swarm; the three or four extra combs seeming to regulate the colony something as a governor regulates the motion of a machine, making it run more evenly.

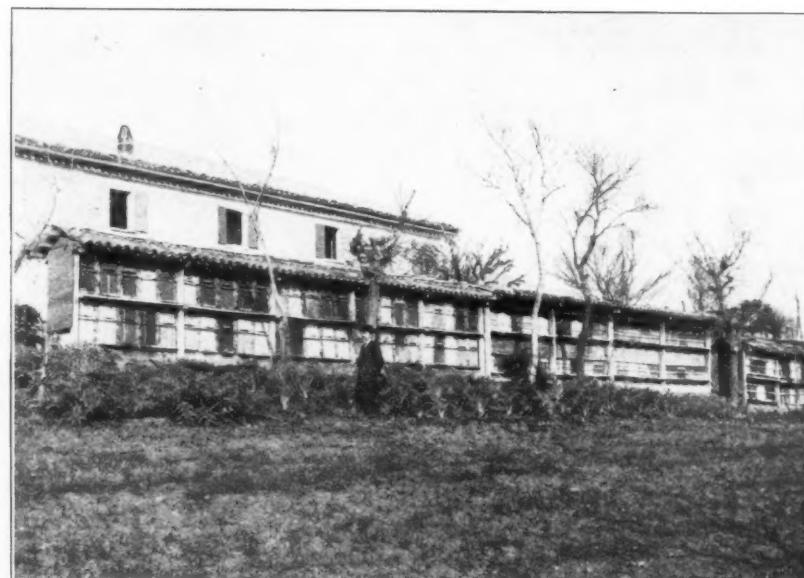
And yet there is something to be said on the other side. Having used both large and small brood-chambers during the past 50 years on a somewhat extensive scale, I believe I am in a position to judge without prejudice as to the merits of the different sizes of hives.

Where the season for honey gathering is of fair length and a later flow of buckwheat, goldenrod, asters, or other late flowers so that the rearing of brood will be continued until late in the season, there is little doubt that the larger size of brood-chamber will prove a great success. Many years ago I made hundreds of brood-chambers to hold 11 Langstroth frames, with clamps to hold 40 one-pound sections. There was at this time a very fair yield of basswood honey which added to our clover, and gave us a fair season. I then thought, especially after a flush season, that an 11-frame hive was just the thing. But seasons change. Our basswood has for many years given us but little nectar. Instead of our 11 combs being filled with brood and honey the latter part of summer, I found often little of either, but instead many of the combs were almost solid with bee-bread, while 8 frames would have held, if well filled, all or nearly all the honey and brood the hive contained. How much better, I thought, to have all in a compact form in 8 frames than scattered through 11.

It is true, as Mr. Barone says, that a good colony well wintered will build up very fast in spring; but I am sorry to say that a large brood-chamber will not of necessity have a large colony in the fall. I have found at least one spring, one yard, where almost without exception every colony that failed to survive the winter was on 11 combs, where nearly all on 8 combs came through safely. It requires more than a large brood-chamber in the fall to



APIARY OF CARLO CARLINI



TALL ITALIAN MOVABLE FRAME HIVES—APIARY OF CARLO CARLINI, OF SANTARCANGELO

make an equally large colony, although it often helps. I found another thing, that I could handle or manipulate an 8-frame hive much faster than an 11-frame hive, as when looking up queens or cutting out queen-cells or making new colonies. An 8-frame hive is also much easier to handle, a matter of some importance as one grows older.

Perhaps nothing influenced me so much in reducing my brood-chambers in size as the fact, as it seemed to me, that I could get bees into sections and storing in them much quicker than with brood-chambers of larger size. Our seasons for surplus honey have become very short, clover being our main, and I might almost say, our only dependence.

For some reason even a strong colony does not seem to enter a super

over a large brood-chamber as soon as a smaller one does over a smaller hive. I have little difficulty, in normal years, in getting a large proportion of my colonies up in strength when clover yields to enter the supers, and so able to get a larger number of finished sections in a brief period than where the bees enter the supers later.

It is true, as Mr. Barone says, we may induce bees in a large brood-chamber to enter the supers by taking away a part of the combs or reducing the size when we wish the bees to enter the supers; but this would seem to be more expensive in labor than the use of a smaller hive.

Again for new swarms, an 8-frame hive is large enough if we would secure a large harvest of section honey. Indeed, if we would secure the largest



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amount in a short time it may be better to reduce the chamber to 6 or even 5 frames, thus forcing them to do most of their work in the supers. The earlier we can get bees into supers, on either old colonies or new, the sooner we are likely to get them filled, and the less partly filled sections to remove and extract and carry over until the following year.

There are other conditions where a small brood-chamber is much to be preferred to a large one for securing section honey. In the South there is considerable territory where bees gather a sort of nectar from the base of the leaves where it is excreted by little glands in the cotton and partridge pea plants. While working on these plants there is apt to be a shortage of pollen in the hives, and brood-rearing proceeds very slowly, as brood cannot be reared without a good supply of pollen. As a result of slow brood-rearing the colonies are small, and increasing the size of the brood-chamber will not increase the size of the colony, because the trouble comes from lack of pollen. If section honey is to be obtained the hive must of necessity be brought down to fit the size of the colonies, which is found to be not more than 8 frames, and a smaller size is often preferable. With a large brood-chamber under such conditions, section honey is pretty much out of the question, while with a small one very satisfactory results are secured.

Mr. Barone says in the article above referred to, that "The importance of principles, of judgments, as well as of inventions of great scientists, men of letters and artists is always relative to the circumstances of time and place." Just so, and so we may conclude that while a large brood-nest is desirable under many, perhaps we may safely say a majority of cases, yet there are many conditions and circumstances where one may succeed better with a smaller one. After using a smaller brood-chamber for a number of years for section honey, I thought I would try one or two yards for extracting. For this purpose I found myself going back, almost instinctively, to a larger hive as far better for securing the largest amount of extracted honey.

The object of this paper is not for the purpose of booming a large or a small brood-chamber, but to suggest to beekeepers that they think for themselves and study the conditions and circumstances with which they are surrounded, and adopt such hives and appliances as are best adapted to secure the largest measure of success in their environment.

Middlebury, Vt.

Sitaris

BY A. F. BONNEY.

COMPLYING with your general request in the December issue of the American Bee Journal, I hand you what the Century Dictionary says about the Sitaris, as follows:

"Sitaris (sit'aris), n. A genus of blister beetles of the family *Cantharidae*, having filiform antennæ and subulate elytra. They are found only in

southern Europe and northern Africa, and only about a dozen species are known. In early stages they are parasitic in the nests of wild bees, as *S. colletes* of southern France, and in those of bees of the genus *Colletes*, where they undergo hypermetamorphosis."

The female imago of the Sitaris is about half an inch long, and the article I am quoting shows seven illustrations of the various changes the insect undergoes.

The mention of the "wild bees.....of southern France" would seem to clear up the matter alluded to, and I was about to let it go at that, but a further search revealed the fact that the wild bees alluded to under the genus *Colletes* "usually burrow in the ground to the depth of several inches. These solitary bees all belong to the family *Andrenidae*, "A family of aculeate melliferous hymenopterous insects; the solitary bees.....All the species are solitary, and most of them burrow in the ground, though some live in the interstices of walls. The cells are provisioned with pollen or honey, in the midst of which the female deposits her eggs." This is, I believe, the classification of Latreille, a noted French zoologist of the last century.

The italics above are mine.

Mr. Ward was evidently somewhat careless in his handling of this subject, or quoted without sufficient research, for the first larva of the Sitaris is fully one-eighth of an inch long, and in the second development, caraboid, almost half an inch in length, and this would, it seems, have some difficulty in doing as he describes: "Rests on the shell (of the bee's egg, I opine) and undergoes its first metamorphosis. Now it eats the honey prepared for the grub of the bee and develops into the perfect beetle." Mr. Ward ignores the six stages of development described by Latreille, mentioned above.

Buck Grove, Iowa.

California Notes

BY W. A. PRYAL.

THIS year of grace has opened in a way that gladdens the bee-ranchers' heart, for throughout the greater part of the State the rainfall has been sufficient to warrant, with the showers that are sure to follow in regular sequence, a splendid growth of vegetation. The honey-secreting flowers will be plentiful; the apiarist must see that his colonies breed up so that there will be a big force of workers to gather the nectar, should it come at the right time. And there's the rub! The grass may grow, the shrubs and vines luxuriate in plentiful garbs of newness, and be jeweled and spangled gorgeously in brilliant array, and yet these beautiful flowers fail to produce any nectar. All, usually, on account of some queer freak of the weather.

This was the case with the writer last season. We had splendid rains at opportune times, and yet the honey crop fell far below the average for wet years. Here with me, it was because the nights through April and May and a portion of June were too cold.

Toward the end of last summer I, in

company with my little family, made an automobile trip into the wild mountains of Monterey county, where dwelt Seneca A. Niver, well known in years gone by as the genial honey man of Wisconsin. The versatile Niver managed my apiary here the year he came to California, some four years since. The location of his apiary seems ideal, judging by the vast honey-flora that abounds thereabouts. And the past year the plants grew luxuriantly and bloomed profusely, and still they did not yield any nectar. So scant was the amount of honey stored by the bees that artificial feeding had to be resorted to in order to prevent them from starving. I was told that the altitude was too much; that above 1800 feet nectar secreting begins to wane. I believe the Niver-Colburn apiary was some 2000 feet above sea level. And it was for this reason that the apiary was moved the past fall to a lower level.

The winter so far has been rather an open one; yet I never knew a winter when there was such a dearth of flowers that the bees cared to visit. They do not bring in any stores at all, though it is common here for them to do considerable foraging during the winter time. It is through lack of getting such winter pasture that more colonies than usual will be starved out, unless the apiarist feeds them.

By the death of John Muir, the noted California scientist and writer, the bee-keepers of the State have lost a good friend. I remember with pleasure his two articles in the "Century Magazine" some 30 odd years ago on "The Bee Gardens of California." It was one of those prose nature poems with which the delightful scientist charmed his readers, and which few other writers could excel.

What I should like to see is the National Beekeepers' Association hold a convention in Oakland this year. Some 30 big conventions from all over the United States are to meet here. The new Municipal Convention building, costing over a million dollars is about finished, and it is offered free—the finest meeting place west of St. Louis, And it's fair time and so near San Francisco, too; only 10 cents ferry service to the grounds with direct service over a picturesquely marine route. Then there are a large number of interesting places and objects to visit, making the sojourn in Oakland well worth while.

While touring northward early last summer I spent several days in Sacramento city. While there I called at the office of Prof. A. J. Cook, our State Commissioner. I was sorry to find that the Professor had gone to the southern portion of the State on business connected with his office, so my call was in vain. Since Gov. Johnson has been re-elected, it is fair to presume that he will continue Prof. Cook in office. Our Horticultural Commissioner is giving satisfaction, though for a time his enemies tried to make it unpleasant for him. When the Governor found that the complaints against Prof. Cook were groundless, he turned them down, and commended the commissioner for his energetic management of the office.

Oakland, Calif.

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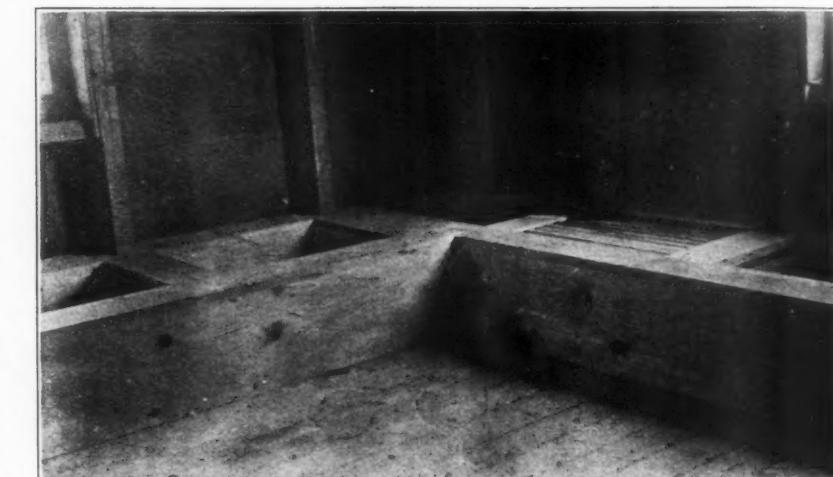
Minnesota's Surprise

BY FRANK C. PELLETT.

MINNESOTA is not in the habit of doing things by halves. She boasts of her leadership, and, as a rule, she has good reason to do so. Two years ago when the committee representing the beekeepers' association asked the university officials that beekeeping be given some recognition in the university, they were informed that there was no demand. The president of the association, Mr. P. J. Doll, and the secretary, Dr. L. D. Leonard, together with some others of the more active members went directly to the legislature, asking for the same recognition given to the poultry, dairy and other farm industries. The legislature was convinced and the department established. However, the readers of this paper already know about the department of beekeeping in Minnesota.

The thing I started to tell about is the short course held at that institution in January. It was my good fortune to be present for two days, and to say that I was surprised at the interest is putting it mildly. In all departments there were about 400 students in attendance at the short course. Of these 78 registered for the course in beekeeping, and at some of the classes nearly 100 were in attendance. It was talked of everywhere as a matter of great surprise that the class in beekeeping should be larger than any other in the whole bunch.

While dairying, poultry keeping and other lines have been established for many years and are generally recognized as important industries in the State, the beekeeping department was not yet established two years ago. Prof. Jager was kept very busy with his classes, some days putting in eight hours of continuous lecturing, with a short interim for dinner at noon. The fun of it is that the local demand for honey seems to be greatly increased because of the publicity the increasing interest gives, and the local associa-



INSIDE CORNER OF STRITTMATTER'S HOUSE APIARY SHOWING HIVE ARRANGEMENT

tion finds it necessary to buy quantities of western honey to supplement its own crop.

Atlantic, Iowa.

House Apiaries

BY F. J. STRITTMATTER.

ANUMBER of enquiries having been sent concerning the Strittmatter house apiaries, described with cuts in the November number, Mr. Strittmatter replies as follows:

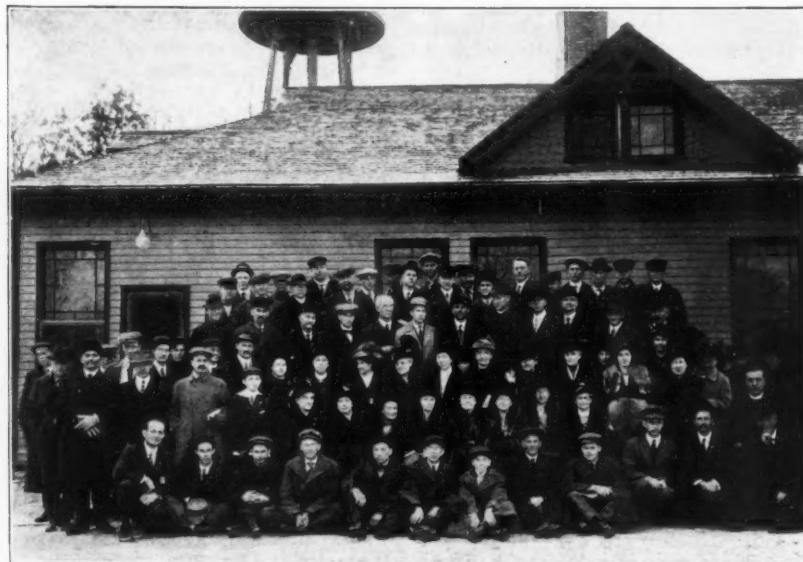
We have had a number of enquiries as to the details of construction of our house apiaries, and find it impossible to give full answers for lack of time, as we are very busy with our honey marketing in winter and with the bees in summer. However, this will cover about all the questions sent in to date.

In regard to swarming, we run our bees at our out-apiaries for extracted honey, and have no swarming unless

we neglect to give plenty of room. At the home apiary we run a part of the colonies for comb honey, and have an occasional swarm, but so far have not had as many swarms in the house apiary as we had outside. We hive the swarms either by the returning plan, by exchanging the frames while the swarm is out, or hive it in a single-walled hive, and as soon as the bees are in the hive place it over the hive in the building where we wish to have it stay, and later exchange the frames, putting the swarm down, or it may go down itself. We have not had over 10 percent of the comb-honey colonies swarm from the house apiary. We certainly like the house apiaries better every year, either for comb or extracted honey.

We have not had much trouble with young queens entering wrong hives, but we usually try to have queens mated in corner hives. The most we have in one row is 15 hives, on the long side of our home apiary, and with four colors of paint the bees have no more trouble getting to the right place than by the usual method outside. We leave the packing around the hives all the time. In fact, it is built solid. We use sealed covers in winter with about 5 inches of sawdust on top, and in spring we use home-made quilts made of cotton or rags about three-fourths inch thick. These we keep on the sawdust in winter, too, as we have no other use for them then. We use an entrance about 16 inches long by a scant three-eighths high, and a heavy strand of wire tacked on the upper side to be sure it is mouse proof. An opening about 4 inches high, from the hive proper, out through the wall of the building, is left open in summer, and in winter we have a sort of storm board we drop down in front, with an entrance about 3 inches long by three-eighths inch high left in bottom.

We use hemlock boards to make the hives in the building, having them surfaced off. The offset where we nail on the tin rabbits for frames to hang on is provided by having the side-boards and end boards of hives seven-eighths inch lower than the hive is to be. The board lying flat over the saw-



ART OF THOSE IN ATTENDANCE AT THE SHORT COURSE IN BEEKEEPING AT THE UNIVERSITY OF MINNESOTA

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dust is about one inch narrower than the space between the ends of hives and the thickness of end boards, and is nailed on so as to allow the proper space for the tin rabbets. I enclose a photograph showing inside corner view of the building, and the hive arrangement we like best. Cuts in November, 1914, American Bee Journal, show outside arrangements, page 383.

Ebensburg, Pa.

No. 3.—The Honey-Producing Plants—"Asters"

BY FRANK C. PELLETT.

(Photographs by the author.)

HERE are said to be about 125 species of asters or starworts in North America, and also many species in Europe, Asia and South Africa. These plants then must be familiar to the beekeepers of temperate regions in all

large variety of insect life, many different species seeking them in addition to the bees. The white rayed flowers are said to be the best honey producers, some species apparently not yielding any nectar. The value of the as-

ters as honey plants is rather uncertain, for while they yield considerable surplus in many localities, the honey makes very poor winter stores and many reports show heavy losses from wintering on aster honey. The honey



FIG. 13.—WILD ASTER

parts of the world. Some species grow in open shady woodlands while others delight in the open sunlight of the prairie. They range in height from 18 inches, or less, to 8 feet. As a rule, the plants are many flowered, as will be seen by the picture. A plant with a small number of flowers was chosen in an attempt to secure greater detail. Sometimes hundreds of blossoms occur on one stem. They range in color from white to blue and dark purple, blue being perhaps the most common color. They have a tendency in some cases to become weeds, but are easily destroyed by cultivation and are not often regarded as serious. The bloom in this locality comes very late, lasting until killing frosts. In 1914 the writer saw bees still working on asters in November.

These plants are very attractive to a



FIG. 14.—BONESET OR WHITE SNAKEROOT



FIG. 15.—WHITE SNAKEROOT IN AUTHOR'S WILD GARDEN

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is said to be white with a mild flavor. In most localities it is mixed with goldenrod and other dark honeys, so that it is not often seen separately. It is said to be rather thin, and by itself not to thicken up readily.

BONESET OR WHITE SNAKEROOT.

There are several closely related species of this plant (*Eupatorium*) known by the names of boneset, thoroughwort and white snakeroot. The common species ranges from New Brunswick to Dakota and south to the Gulf of Mexico. Boneset is frequently spoken of as a honey plant. It blooms in late summer, sometimes persisting until frost. This plant is a perennial, and if left undisturbed remains for many years in open woodlands that are not too closely pastured.

The species common in western Iowa is known as white snakeroot (*E. urticaefolium*), which is supposed to be poisonous and to cause the disease known as trembles in animals. Although much of this plant grows in the writer's wild garden and the cow sometimes eats it, no bad effect has ever been noticed. Probably the quantity taken has not been sufficient. Milk sickness is said to be caused by the use of milk, butter or cheese, or even meat from animals afflicted with trembles. If the trembles be caused from eating white snakeroot it is then, indirectly, the cause of milk sickness.

In his book on poisonous plants, Dr. L. H. Pammel cites a number of cases where the disease, "trembles," has been produced in animals by feeding them with the extract of this plant. Dr. Pammel also cites the results of investigations that seem to contradict this conclusions, so as to whether this plant actually sustains any relationship to these diseases would seem to be questionable.

The boneset of commerce is made from *E. perfoliatum*, which also is most

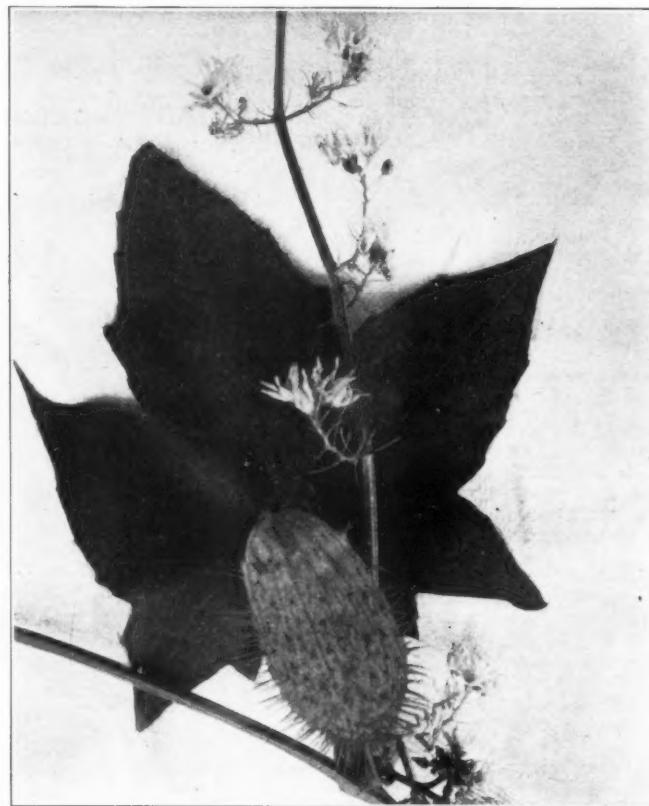


FIG. 16.—FLOWER, FRUIT, AND LEAF OF WILD CUCUMBER

often spoken of as a source of honey. The drug is well known and widely used as a remedy. These plants are quite an important source of fall honey.

WILD CUCUMBER.

The wild cucumber, or wild balsam apple (*Echinocystis lobata*) is a climb-

ing vine common along streams from New England to Texas. It is also commonly cultivated as the shade for arbors, porches, etc. The plant is an annual and comes from the seed each year. There are few localities where it is sufficiently abundant to be of value to the beekeeper, and it is seldom mentioned among honey plants. However, in a few localities along the Mississippi river it is reported as quite an important source of nectar in mid-summer. On river bottoms it occasionally grows in great abundance. The writer has no personal knowledge of its value.

Atlantic, Iowa.
Copyright, 1915, by Frank C. Pellett.

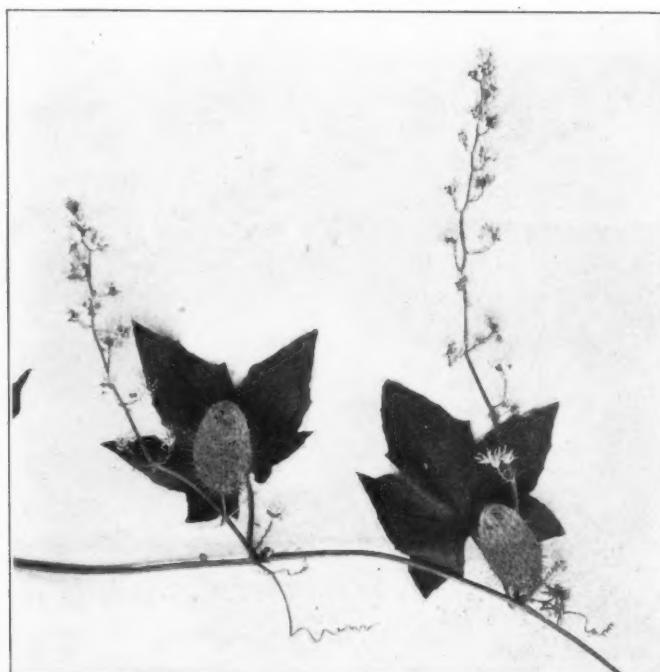


FIG. 17.—WILD CUCUMBER

European Foulbrood

BY P. H. ELWOOD.

WE have had quite an experience with European foulbrood. It might interest you to know how bad it is sometimes. When it commenced, in 1897, we had between 1300 and 1400 colonies. In 1903, we had less than 300 colonies left, and that after buying more than that number (300) of healthy swarms from localities where it did not exist. In 1906 it practically disappeared. If I had not bought any, quite likely it would have disappeared sooner. The new bees added fuel to the fire, for they took the disease and the contagion became stronger, and some of the old ones would again take the disease or become worse if they had not overcome it.

About the middle of the summer of 1897, I visited an outyard and found

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about one-third afflicted with a new disease that was unlike the old American foulbrood with which I was familiar. As it was a disease of the brood I killed all the queens and later replaced them after the brood was all hatched out.

It disappeared in the fall, and the next spring we had very little of it. The following year was very poor for honey, and it again appeared with irresistible force. In mild cases it usually disappears in the fall, but unless something is done to check it, the disease usually reappears in the second brood next spring. We did everything for it. We shook them on clean empty frames. We reshooke them after a few days. We dosed them with lysol and carbolic acid. We fumigated the combs with formalin, but it reappeared. The contagion seemed to be everywhere, in neighbors' bees and bee trees. In fact, there is no doubt that the mature bees and the queen become diseased and carry the disease. We finally went back to the method I practiced the first day, killed the queens and allowed them to clean house. After the brood has all hatched, or after three weeks, give them a good queen. This gives time for the removal of diseased larvae and contagion. In mild cases it will usually disappear. We preferred Carniolan queens; first, because they are more prolific; second, because we thought them more resistant.

When the swarms are weak and the disease bad, as when the larvae settle down to the lower side of the cell like a drop of pus, the colony may as well be killed.

Whoever has not had "larvae settle down to the lower side of the cell like a drop of pus," has not had European foulbrood in its worst form. Specimens of such brood taken from our apiary have been found to be infected with *bacillus alvei*, the cause of European foulbrood. I use this comparison because the larvae drop down without form and of the color of pus. There may be different types of European foulbrood, but I have supposed there was only one, differing in degree or virulence. Dzierzon speaks of two kinds. He advised, as early as 1857, the

"well-timed removal of the queen from incipiently infected colonies" as a cure.

Forty-two years ago, in transferring some bees into Quinby frames, Capt. Hetherington discovered that I had bought some (American) foulbrood. Capt. Hetherington had had much experience with it. Later when it was proposed by influential bee-men to call this "New York State disease," the old fashioned foulbrood with variations, I vigorously opposed it, feeling that my experience with both diseases justified me in doing so. We, therefore, kept up the agitation until the question was decided right.

With some diseases in the human family, those who survive become immune or partially so, and I believe this is somewhat the case with this disease among bees. A noted beekeeper from England once told Capt. Hetherington that the bees in a large section in his country were practically immune to European foulbrood.

If you want to know anything more about our experience I will answer promptly, but don't ask me for an infallible cure, for I know of none.

Fort Plain, N. Y.

Beekeeping in the Boise Valley, Idaho

BY GEORGE W. YORK.

BEEKEEPING is one of the growing minor industries along the agricultural line in the State of Idaho. In what is known as the Boise Valley, which is one of the larger irrigated districts of the State, there are many successful producers of honey. Among the more extensive beekeepers is E. F. Atwater, of Meridian, who has a total of 1100 colonies scattered around in 13 different out-apiaries. The major portion of his crop is extracted honey, which he disposes of in both glass and tin packages.

The season of 1914 was one of the poorest experienced in his locality in recent years. His average per colony was only 50 pounds. One year his average was 150 pounds, and that sea-

son he had a total of around 80,000 pounds.

The principal sources of honey here are alfalfa and sweet clover, the latter growing in abundance mainly along the irrigation ditches that extend in many directions all over this beautiful valley.

Mr. Atwater finds almost unlimited demand for his product, the main difficulty being to produce enough to supply the market. He not only furnishes the grocers of Boise—a city of some 30,000 people—but ships in all directions.

The picture shown herewith represents an experiment that Mr. Atwater made in 1911 and 1912, to see if a location could be overstocked. There were 540 colonies in this one apiary, and the average secured per colony was only about 35 pounds. He concluded that there were too many colonies in the apiary, in view of the extent of the honey-producing blossoms in the immediate vicinity, although in a really good season he doubts that this locality can be easily overstocked.

Mr. Atwater's apiaries are being located farther and farther away from his home, as it seems that for some reason he is not getting the results he formerly secured in the old locations. He is discovering some new places which he believes in the near future will produce excellent crops of honey.

It is Mr. Atwater's intention to run his apiaries almost wholly for extracted honey hereafter, as it is impossible to get the best grade of comb honey in this locality.

He uses the ordinary size frame (Langstroth) for brood and for the extracting stories. But his bottom-bars are $\frac{1}{4}$ inch shorter than the ordinary bottom-bar, which draws the lower ends of the end-bars $\frac{1}{4}$ inch nearer together when nailed. This is a kink that helps to remove the frame more easily from the hive than if the bottom-bar were of the usual length.

Mr. Atwater also prefers a single groove in the underside of the top-bar, and fastens the foundation with melted beeswax rather than with the use of a wedge. He says he can put the foun-



E. F. ATWATER, OF IDAHO, KEPT 540 COLONIES IN ONE YARD TO FIND IF THIS LOCALITY COULD BE EASILY OVERSTOCKED

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dation in more rapidly, and thinks it is better in every way. It also makes the frames less expensive than if double grooved and wedged.

The ordinary friction-top honey pail has not been altogether satisfactory to Mr. Atwater. He prefers the common lard pail with a double cover, the extra cover preventing the entrance of dust or other foreign matter. The extra expense is perhaps only half a cent per pail.

Mr. Atwater, with other beekeepers here, is much interested in strengthening the bee disease laws of Idaho at the present session of the legislature. But I will later write an article on this subject and the extent of the beekeeping industry in this State, getting some of the information from the Horticultural Inspector, under whose department comes the enforcement of the bee laws of the State of Idaho.

Sandpoint, Idaho.

Another Method of Introduction

BY SOUTHWESTERN BEE CO.

FROM a casual reading of the December American Bee Journal it appears that queen introduction is being given a great share of attention just now. The article from our Swiss brother was of particular interest, especially because he went into detail as to most of the more commonly used methods and gave comparative records. Our apiary manager has asked us to describe what he calls the *water method*, one which he assures me has never in his experience met with failure. He says that he wishes he might have had an opportunity of trying it on the obstinate No. 23 that Dr. Bruennich described.

The procedure is as follows: Kill the old queen; remove all frames from the hive and shake into the bottom of the box with a sharp jar, all the bees possible. Sprinkle the mass of bees on the hive floor with water until they are *soaking wet*. The secret of success is in the use of plenty of water; there is no danger of overdoing this part. Wet the new queen thoroughly and put her on the pile of wet bees. Put back the combs into the hive and the job is finished. We have been using this method for several seasons. We have never lost a queen, even in the most obstinate cases, and have found the method successful with virgins, with laying queens, and with queens received in cages by mail.

When honey is coming in, any time of the day will do for the work of introducing, but in times of dearth it is better to wait until about an hour before dark.

The chief value of this method is that there is no time whatever lost and the new queen is immediately accepted and ready to go to work. It has none of the disadvantages of Arthur C. Miller's smoke method. (Incidentally would say we have had only partial success with smoke.)

Some may say that when Dr. Bruennich plunged No. 23 into the lake, he had practically adopted the method above described, but the difference, and we believe the cause of his failure,



Some of the beeswax rendered at the Massachusetts Agricultural College Rendering Station—Mr. Jno. L. Bayard operator. The piles represent about 800 pounds of commercial wax.—(Author's illustration)

lay in his use of the wire cage and the fact that he did not soak the new queen in water and release her with the bees.

San Antonio, Tex.

Why Not Save the Wax?— It Will Help Pay the Foundation Bill

BY DR. BURTON N. GATES,

(Associate Professor of Beekeeping, Massachusetts Agricultural College.)

IN States where apiary inspection is progressing, inspectors often find occasion to condemn considerable amount of comb. This may be broken or mutilated, and unsuitable for further use in the hives or it may be good comb, but infected and not desirable to use. This is especially true where American foulbrood prevails, for it is not considered safe ever to use American foulbrood comb.

Inspectors find, too, it is by preference often times, that beekeepers will destroy this comb and not attempt to salvage this wax. Rightfully there is a prejudice against home wax rendering. Unless one has exceptional facilities, wax rendering in the kitchen or home is highly objectionable to the entire household. Furthermore, it is time-consuming and generally conceded that home rendering does not give maximum returns.

In an effort to meet these objections, the Massachusetts Agricultural College and the Apiary Inspection Service have offered provisionally to open a Wax Rendering Station. This was announced previously in the American Bee Journal. The results have been astonishing and almost overwhelming. For instance, one shipment of scrap wax consisted of a thousand combs.

There have been other large shipments as well as many small ones. Apparently the opportunity has met with immediate favor. As evidence of some of the product of this Rendering Station, the illustration herewith shows a part of the product of the last few weeks. At some future time figures will be given to show the amount of wax salvaged during a given period.

If the college had not offered its services, in some instances at least, the writer knows positively that the material rendered would have been burned up rather than to attempt its reduction at home. Furthermore, knowing that these services are available, the beekeepers are saving their scrap wax. To do this, a tight barrel should be procured, and as comb is thrown into it, a tamper, such as a piece of 2x4, should be used to pack the comb solidly into the bottom. The harder the comb is packed the better the results. Among a relatively few colonies of bees, the apiarist will be surprised, in the course of a year, at the amount of scrap wax which he will accumulate. Freight rates are low, consequently he may well afford to ship this to the Central Rendering Station for reduction. At his pleasure, the rendered product will be forwarded to the foundation manufacturer, supply agent, or elsewhere as he may direct.

It should not be forgotten that beeswax is as important a product of the apiary as the honey. The well cared for apiary, moreover, will not show old comb and wax scraps scattered about the premises. If not destroyed, they will be stored for rendering. Beekeepers should not lose sight of the possibilities of obtaining a neat margin of income from their old combs and scraps. As the policy of the Massachusetts Agricultural College becomes more definitely proven and more widely

American Bee Journal

known, it is anticipated that additional wax rendering stations will be available about the country.

Amherst, Mass.

The above advice is in the right

direction. We know by the amount of combs shipped to our people that most beekeepers dislike the task of rendering them. Yet they are too valuable to be wasted.—EDITOR.]

of the workers would look the same as goldens, some the same as blacks, with perhaps some intermediate.

Demaree Plan—Storing Empty Combs

I would like to ask some questions about a plan you mention on page 351 of the American Bee Journal for October, 1914, which you call the Demaree plan. You say just before swarming, put all the brood but one frame in a second story over an excluder, leaving the queen below with one frame of brood and empty combs of frames filled with foundation.

1. Do you cut out all queen-cells at this time if there are any?

2. Is it necessary to examine each colony about every 10 days to remove queen-cells afterwards?

3. I would especially like to know how it would do to raise up the top story after two or three weeks and place a super with sections beneath it, and then if the season were good just keep on adding more comb supers as needed, always placing the empty one underneath, the same as when running for comb honey only; that is, I would like to get all section honey except the one top story

DR. MILLER'S ANSWERS~

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Is Fall Shipping Injurious to Bees Wintering?

I am considering shipping bees in the fall, say 100 miles or more, and then giving them a good flight before putting them in the cellar. Do you think it injurious to their wintering well to ship them in the fall?

WISCONSIN.

ANSWER.—If they have a good flight before being taken in cellar, I should not expect any harm from the journey. The excitement of the journey, however, would make them eat a little more, so you would have to be a little more careful to see that they had stores enough.

Spring Protection After Wintering With Supers in Cellar

For the first season my bees are wintered with supers on, I had to leave them on so that my bees would not be short of stores. I would like to know if there would be a way in the spring to have my bees all in one single brood-chamber, so as to keep them warm for the first month after they are taken from the cellar?

QUEBEC.

ANSWER.—If the upper story contains the same kind of frames as the lower, and you find the bees in the upper story, it will not be difficult to lift out all frames containing brood and put them in the lower story, brushing in front of the hive any bees that may be on the other frames.

If the upper frames are not the same as below, and you find the brood-nest above, and much brood there, then you had better leave them as they are until warmer weather. Indeed, in any case, seeing the bees are all wrapped, it may not be a bad plan to leave them just as they are until warmer weather comes.

Shipping Bees—Red Clover Workers

1. Please send me the price of honey-bees and queens, and price of comb honey
2. When is the best time to ship bees in the spring?
3. What kind of a bee will work on red clover?

WEST VIRGINIA.

ANSWERS.—1. I do not rear queens for sale, although I sometimes sell a queen in July. I make my money selling honey, and to get the most honey I can afford to take a lot of pains to rear the best queens I know how, and can make more money selling the honey of such queens than I can selling the queens themselves or their bees. If there is any one thing a honey producer should strive for, it is to learn to improve his stock by rearing queens from his best stock.

2. In freezing weather the combs are somewhat brittle, and likely to break easily, and the bees do not stand a journey as well as when more active. When combs are filled with honey they are likely to break in transit, and if too warm there is more danger that the bees may suffocate. So the best

time in spring is while the combs are mostly empty, any time after it is warm enough for the bees to fly nearly every day.

3. The common hive-bee generally gets nothing from red clover because the flower tube is too deep for the length of its tongue. There are times, however, either because the tube is not so deep as usual, or because it is fuller of nectar, when a honey-bee of any race will get nectar from red clover. It is also true that there is a difference in the length of bees' tongues, and there have been bees with tongues of such length that they could work on red clover when others could not. Unfortunately it is impossible to keep up such a strain of bees, or else sufficient care to do so has not been exercised. So at present I do not know that you can find what you desire.

Miscellaneous Questions

1. I have decided to make the production and sale of extracted honey my sole occupation. We have two flows in the fall equally as good as in the spring. I am going to buy new hive bodies with Hoffman frames. If you were in this position please name the one size body that you would buy?

2. A friend says the 4-frame extractor cleans the combs better and without breaking them as badly as the two frame. Is that so?

3. My bees are wintering in two eight-frame bodies, sealed cover and heavily wrapped in paper. Would it be safe to move them five miles on a cool day with only the $\frac{3}{8}$ -inch entrance for ventilation? I can't move them much before the middle of March.

4. There are combs and honey in both bodies. Where will the queen start her brood-nest this spring?

5. You say the bees will take care of their own queen in a cage, but if she is caged and put in another colony above the excluder will those strange bees take care of her?

6. How will bees look that are the product of a cross between a golden and a black?

KENTUCKY.

ANSWERS.—1. I think nothing less than 10 frames.

2. If each is run at the same speed, I don't see why there should be any difference. It takes less force to speed the lighter one up to a high rate, so in the hands of a careless person there might be a likelihood of greater speed with the smaller one, and so more danger of breaking combs. Still, this is only a guess; I don't know.

3. I think you could safely undertake it. Keep watch, and if the bees show too much excitement give them a sprinkling of water.

4. Most likely where the brood-nest was in the fall, and that may be in either story, most likely the lower one.

5. Generally there will be some bees so good natured as to feed a strange queen; but it is safer to have the cage provisioned, and then the queen can feed herself.

6. I don't know. I should guess that some

TWO COLONIES OF E. F. REHBERG, IN THE CITY OF NEW HAVEN, CONN.

of full frames. Do you think this could be done?

4. How can I keep empty combs from one season to another and not have them destroyed by the wax moths?

IOWA.

ANSWERS.—1. Yes.

2. Generally it ought not to be. The idea is that the bees are in the same condition as if they had swarmed naturally. Of course, it sometimes happens that when a natural swarm is hived it throws off a swarm the same season, but that is exceptional. Some have reported that they never have a colony swarm that has been treated by the Demaree plan, while it fails with others. You can tell by trying whether it is a success with you.

3. It will work all right if the season is good enough to fill both the brood-combs and the sections. But you must expect that so long as there is plenty of room in those old combs the bees will not do very much in the sections.

4. There is no way so good as to leave idle combs in the care of the bees themselves. A colony not so very strong can be induced to take care of four or more stories of combs. Put two or three stories of combs below the colony, and two or three stories above. With a strong colony it will work all the better; but of course it will not do for a colony working on sections.

You may also submit the combs to the fumes of carbon disulfide, which will kill not only the larvae of the moth but also its eggs, and then if you seal up the combs



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moth-tight they will be safe. If the combs have had outdoor freezing all winter, then they will need no fumigating, only the moth must be kept from them.

Moving Bees to and from Out Yards and Home Cellar

1. When bringing bees from out yard to home cellar, should they be given a flight before put into cellar?
2. When taking bees from cellar, should they be given a flight before being taken to out yards?

OHIO.

ANSWER.—1 and 2. Yes to both questions. At least it is better. Bringing home from the out yard causes a good deal of excitement with extra consumption of stores, and so the bees are not in quite so good shape for the winter's confinement as if they have the chance for a flight. Still, it may happen that they are brought home when there is no likelihood they will have weather for a flight, in which case it is better to put them right in the cellar. In the second case it does not make so much difference, but it can seldom happen that they will not have a chance to fly before being hauled away.

Water in Bee Cellar—Concrete Floors

On Jan. 16, we had a heavy rain and about 3 inches of water fell. My eaves troughs did not carry the water, and it ran down my cellar walls. I dipped up about two pails full. The floor is damp in under the hives, where I cannot dry it, and two of the side walls. The temperature at the bottom is 44 degrees; on top 50 or 52 degrees. So far the bees have wintered finely, as far as I can tell. I have 100 colonies in the cellar, size 10x18 feet, and 9 feet deep. Is that too many? The cellar walls are made of concrete. I dug this cellar last August; the floor is concrete also. Did I make a mistake by concreting the floor? How would it be to put a stove in the cellar and have a fire for several days, even if the temperature went up to 65 or 70 degrees? Would it hurt the bees? I am heating foot stones and putting them down cellar. Will this do more harm than good?

WISCONSIN.

ANSWER—The quality and temperature of the air are things to be considered. If these be all right, water in the cellar will do no harm. One case attracted attention some years ago in which bees wintered in excellent condition in a cellar with a constantly running stream of water. But with a wet cellar bottom it is better to have the temperature a little higher than if the cellar were dry. Your heated stones will likely do good rather than harm. A stove might be all right, too, only don't have an oil stove without some sort of chimney to carry the gases out of the cellar. Raising the temperature temporarily to 65 or 70 degrees might do good if the bees were uneasy, but not necessary if they are quiet. In any case it would not do to continue it long.

Your cellar is large enough for the bees you have in it. The concrete floor is not considered the very best. Years ago Adam Grimm built a special bee cellar with a concrete floor, or its equivalent, and it was not a success. Still it might not have been entirely the fault of the floor. Some object to a concrete floor because the noise or jar-ring of one pile of hives is communicated to others.

Extractor Speed—Brood Combs

1. I would like to know the speed that a honey extractor must run to do good work. I have some cog wheels speeded three turns of the smaller to one of the larger. Will that speed enough to extract honey?
2. Should the brood-frames be extracted, and can it be done without injuring the brood?

GEORGIA.

ANSWERS.—1. Three to one will give you plenty of speed; all that is necessary is to

turn fast enough. Indeed, there is no trouble about getting speed enough with no cogs at all. The first extractor I knew anything about had none; each revolution with the hand made a revolution with the baskets.

2. Unless you are very careful you are likely to throw out brood if any is in the comb; and it is not considered best to extract honey from such combs.

Getting Colonies "Boiling Over" for the Honey Flow

Several years ago my uncle moved to Madison, Wis., and donated to me his bees (3 colonies in box hives), which I accepted, and since that time we have had more or less honey for our own use. Several times I have tried to get at the inside workings of beeedom, but I confess it has been considerably like "Greek" to me.

At present I have 17 colonies in the cellar (8 frames each of Hoffman pattern), and they seem to be doing nicely. Within the last few weeks I have had a rather severe attack of bee fever. I want to see if I can't really make my bees do something worth while—not get an enormous crop of honey every year, but to do at least as well as the average "modern" beekeeper. Next spring I hope to clip my first queen's wing. I have taken the American Bee Journal during the past year, and the pages that interest me, at least as much as any, are those containing your department of questions and answers; hence I have a few questions which I trust you will answer through your columns. I confess I have somewhat of a dread of asking foolish questions, and I am quite sure if I "seek diligently" I can find answers to most of my queries without asking questions, but I have been helped through your answers to questions that have been asked by others—some of which may have seemed rather foolish to you perhaps, so my questions may possibly help some other amateur.

From what I have read, it seems imperative to have a hive "boiling over" with bees at the proper time if one is to get honey in the supers. Now, what is one to do if the queen will not lay but a moderate number of eggs though she has plenty of room? The following plan suggested itself to me: Two queens will probably produce more bees than one, hence why not either divide a colony as soon as practicable in the spring, placing each division side by side, and just at the beginning of the honey flow, give each colony in the evening a sprinkling of something with an odor perhaps essence of peppermint diluted, and the day when when bees are flying, take one hive away, and if

necessary move the other on the line that formerly divided the two. Or, instead of making equal division, use a small division from some other colony placed by the main dependence, and treated as above. Use divisons for increase if desired or double up late in the fall. Might not a moderate laying queen produce stronger bees than a very productive one? How would it be to place under the brood a super of shallow frames of comb for building up purpose in the spring, if a 10-frame hive is used? Would a queen be any more inclined to go down into the shallow frames than into another full depth body?

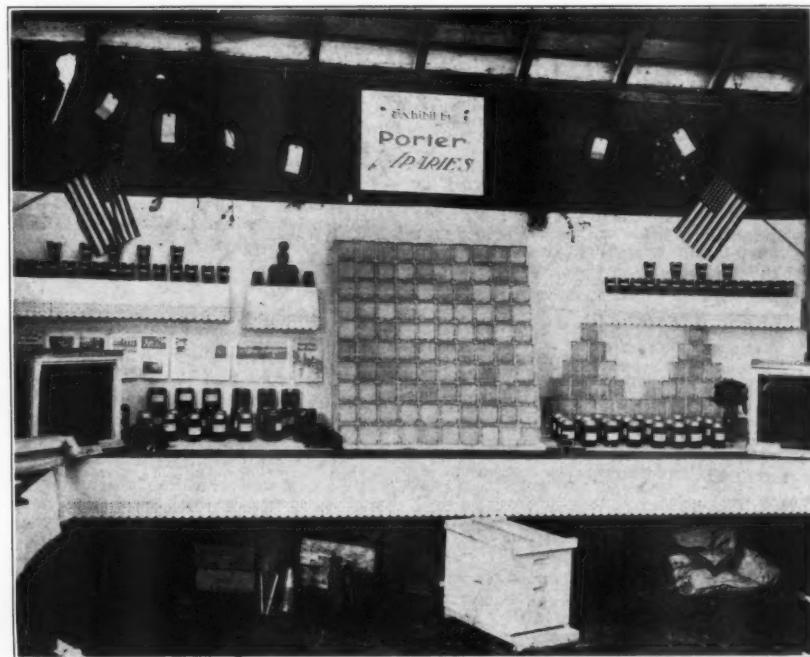
WISCONSIN.

ANSWER.—I'm not likely to receive a severe shock from receiving foolish questions. First, because I've answered so many that it's hard to get up any of a new kind; and second because I've a vivid recollection of the time when I wanted to ask the same kind of questions myself, but had not the chance that this department affords. So don't hesitate to ask.

You are quite right in thinking it important to have strong colonies ready for work when the harvest begins, but you are not so right in thinking that you have weak colonies because the queens will not lay enough. At least the chances are 99 in a hundred that you are wrong. For in that one case in a hundred it may happen that the queen is so poor that she will not lay enough eggs under the most favorable circumstances; but it ought hardly to be one in a hundred. The likelihood is that you never had a queen but would have laid twice as many eggs as she actually did lay in spring if she had had the proper encouragement.

Like enough you had a queen last spring that at one time kept only four frames filled with eggs and brood. She might have laid more eggs, but what use? She was laying all her bees could cover, what more could she do? If you had taken from some other hive enough bees to double her family, she might have laid double as many eggs or more.

If, on the other hand, you had taken away half of her bees, you would thereby have caused her to lay only half as many eggs or less. So you see your scheme would lessen instead of increasing the number of eggs.



W. L. COX, OF PORTER, WASH., BELIEVES IN HONEY EXHIBITS

American Bee Journal

The reverse operation would work better, and more than once I have united weak colonies early in the season. Please remember this: A colony of 20,000 bees will accomplish more, either at building up or at storing honey than two colonies of 10,000 each, even if each of these two colonies has as good a queen as that of the first colony. So far as I can judge I would expect just as

vigorous bees from a queen laying 2000 eggs a day as from one laying 1000.

At or a little before the time the bees have filled one story with brood in spring it will work well to put a second story under, but they will not work down any more rapidly into a shallow chamber than into one of full depth.

is off. We are getting locally for a very fair grade of light amber only 4 to 4½ cents when we can find some one willing to buy. I averaged about 200 pounds per colony, extracted. I hope that conditions will improve at least enough to enable me to take all the bee papers that I want.

Escondido, Calif. CHAS. V. SCHNACK.

Exhibits in Washington

Attached are photographs of bees and honey. Number 1 is a part of my exhibit for this year. I had a corner space 8 feet on the end of the building and 16 feet of side space; the 16 feet is all that shows in the photograph. There is a gauge over the comb honey so it does not show as well as it might. I had three observation hives; two show on the ends, but you could not tell what they are.

This was considered the best exhibit on the ground. One feature was live bee demonstrations by Master Roy Cox, my 8 year old son, who worked without hat or veil of any kind, and with his sleeves rolled to his elbows. Of course, it was necessary for me to stay in the cage with him.

We had a queen's wing clipping contest and a bee quiz. The quiz was won by a 16-year old boy who scored 98 points. There were 12 entries, and the lowest score was 48. Those contests were all for school pupils. The premiums amounted to \$20.

Number 2, is a home-made observation hive; it was mine also. About \$35 in cash premiums were paid last year. I was barred from competing.

I have 15 colonies. My best yielder this year produced 180 sections. I had 26 colonies, spring count, bought 125 this fall. I expect to increase to 175 in the spring.

Porter, Wash. W. L. COX.

Pollen in February

Prospects look good to me for the coming season. Last season's crop was an average of 8 pounds of comb honey per colony. Lots of pollen rolling in from maple. I enjoy reading articles written by our able beekeeper, Mr. G. C. Greiner, which is well worth the price paid for the Bee Journal, to me at least. But I hope he will tell through the Journal about half swarms (page 21).

Rayville, La. W. R. CUNNINGHAM.

Flour for Early Pollen Substitute

When giving flour or meal to bees in early spring as a substitute for pollen, we pack it with the hands into little mounds or lumps, exposed in boxes in some sunny, sheltered

REPORTS AND EXPERIENCES

Report from Mr. Doolittle

We are having lots of snow here and much zero weather, which, together with high winds, has so piled up the snow that our roads are almost impassable; but as the bees are in the cellar they are not harmed. They seem to be wintering well.

G. M. DOOLITTLE.

Marietta, N. Y., Feb. 5.

Queens Already Laying in January in Texas

This forenoon I examined a yard of 53 colonies, and found quite a few with eggs and sealed brood. Last week I found several colonies with hatching brood in them. The winter has been very mild, and there was a late fall honey flow, and my queens were nearly all reared in the fall.

Beeville, Tex., Jan. 20. C. S. ENGLE.

Summary of the Season in Minnesota

The spring of 1914 was cold and rainy; in fact, during the month of June we had 17 days of rain, and on days it did not rain it was so cool and cloudy that bees could work but half the time, consequently when white clover and basswood were at their best, little surplus honey was gathered.

Then after the rainy season was over, a very dry and hot spell came which again stopped the flow. I started in the spring with 68 colonies, increased to 83, and had I let all my bees swarm, I would have secured but little surplus honey. However, by making but little increase and attending strictly to everything needed in a well conducted apiary, we managed to secure a surplus of 2500 pounds of fine honey.

We had a nice fall flow from hearts-ease, goldenrod and other fall flowers, and the bees filled their brood-chambers so that for the first time in years I did not have to feed one pound of syrup.

We had a most remarkable fall. November 26 the bees still gathered pollen from dandelions, which were very numerous at that time. My 75 colonies went into the cellar Dec. 7, and so far have wintered perfectly. The regular covers were all left off, but a ½-inch flax fiber cover was put on. The makers claim that these flax covers will absorb all moisture inside of the hive, and that no moldy hives will be found in the spring.

One inspector says that the outlook for a good honey crop is very promising, so we beekeepers are all hopeful, but we should remember the old saying, that "There is still many a slip yet between the cup and the lip."

G. A. BARBISCH.

La Crescent, Minn., Jan. 14.

Sweet Clover in Montana

The Planthead valley has been considered a very poor honey country, but this season we had about seven acres of sweet clover in bloom; three acres we cut for hay after it was about three weeks in bloom, the balance we let stand for seed and threshed 25 bushels of seed. This was the large biennial yellow *Melilotus officinalis*. It makes a better hay than does the white variety, and is so much easier cured. It can be cured in the windrow easier than alfalfa. The white variety has to be cured in the swath, then by that time the leaves all drop off and there is nothing left but a lot of very coarse leaves.

The yellow makes a better quality of honey, too. Our bees took advantage of the situation and filled their hives with as nice

a lot of honey as I ever saw.

We aimed to seed some 25 acres early this year. The reason we will seed early is that the seed has a very hard shell, and if sown in the spring it sometimes doesn't sprout until the next spring. By sowing it late in the fall, if it is necessary to harrow it in the spring it can be done. That will insure a stand the first year.

Some think that stock will not eat it; this is a mistake. All our stock eats it. We have an orphan colt six weeks old that eats it in preference to bright clean oats hay, and if any one wants a permanent pasture let them plant sweet clover. Cattle and horses will eat it down to within two inches of the ground, and right there, next to the ground, it will bloom and form enough seed to reseed itself.

When this plant is better known, it will take the place of that treacherous plant alfalfa for more than one reason. Firstly, it doesn't bloat cattle nor sheep; secondly, it will grow on wetter and drier soil than will alfalfa, and it contains more protein than alfalfa. It is healthier and more wholesome feed for cattle and horses than alfalfa.

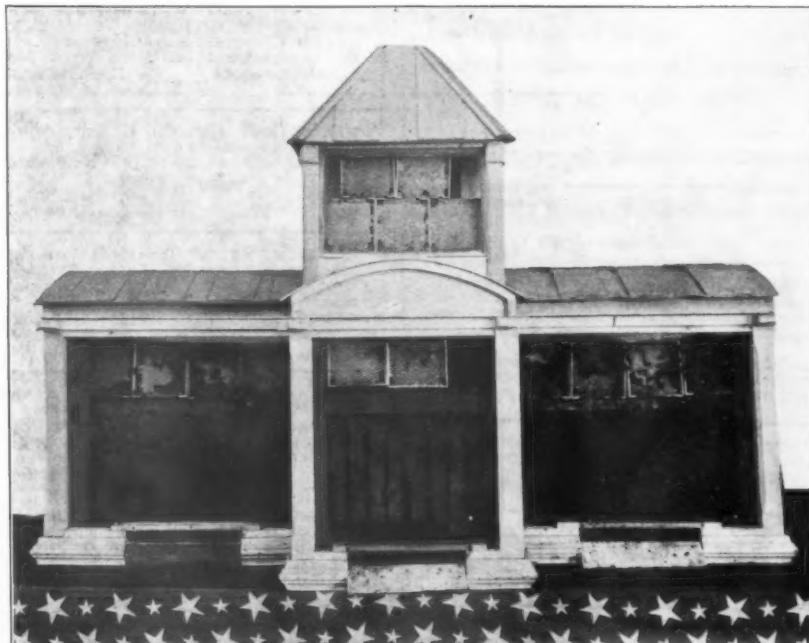
On sheep and hogs I have never tried it. It is not as palatable to horses and cattle as is alfalfa, when they first have to eat it. For bees the two varieties ought to be planted; the yellow will bloom two weeks earlier than the white. By sowing both varieties for bees, they would have pasture all summer.

JOHN D. KAUFMAN.

Kalispell, Mont., Nov. 2, 1914.

Season Good But Market Off

The season was fair here as regards the amount of honey produced, but the market



LARGE OBSERVATION HIVE OF W. L. COX, IN WASHINGTON

March, 1915.

American Bee Journal

spot. The loose flour would otherwise be blown about by the fanning of the bees' wings, and many would literally drown in it. Dr. Bonney suggests the following:

When giving my bees a large quantity of flour in the spring, I lay over it a piece of wire cloth, and one with $\frac{1}{8}$ -inch mesh is not too large. Put the flour into a box, cut the cloth to fit inside loosely and lay it on top of the flour. As the bees take away the feed the wire settles down, thus preventing them getting smothered.

Buck Grove, Iowa.

Foulbrood Decreases Number of Bee-keepers

It seems to me that beekeepers who are advising every farmer and everybody else to keep bees are laying up very much trouble for themselves.

Beekeeping is the business of an expert. This theory that there is plenty of honey for all may be true enough some years. But what about poor years? Then the average farmer has too many irons in the fire to pay much attention to his bees at the right time. Then the real danger to meet is foulbrood.

I know of one village in whose vicinity there used to be over 500 prosperous colonies, and two years after only one colony remained; and that one came in from outside territory as an absconding swarm—foulbrood caused it. Such is the report from several localities near me.

I have been keeping bees about 25 years, but putting in most of my time raising stock and farming. A few years ago I concluded that I would rest a little from my labors in other lines and pay more attention to bees. I got Tri-state hives and some queens from the best breeders. The number of queens that I have introduced is limited, but I never have lost one yet in introducing. I have followed the directions on the cages, the smoke method, the wire cage over the hatching brood, and simply dab them good with honey and drop them between the frames. My experience would lead me to believe that a colony must be queenless for a time. The bees seem to know and like a good queen.

JNO. M. BIXLER.
Corning, Iowa.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook,
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GOLDEN all-over Queens. Untested, \$1.00. Tested, \$3.00. Breeders, \$5.00 and \$10.00. Robert Inghram, Sycamore, Pa.

CAUCASIAN AND CARNIOLAN queens from the original importer. See larger adv't. Frank Benton, Cher. Sta., Washington, D. C.

UNTESTED Queens, 75c each; \$7.50 per doz. Nuclei, \$1.25 per frame. Bees, \$1.50 per pound. Full colonies, 8-frame, \$6.50; 10-frame, \$7.50. Stover Apiaries, Mayhew, Miss.

QUEENS—The quality kind, 3 band Italians only. Winners at Hartford and Berlin, 1914. Untested after June 1, \$1.00. A. E. Crandall & Son, Berlin, Conn.

ITALIAN QUEENS, bees by pound. Descriptive list free. Apiaries under State inspection. Leaflets, "How to Introduce Queens," 15c. "How to Increase," 15c. Both, 25c. E. E. Mott, Glenwood, Mich.

NOTICE W. W. Talley will sell bright Italian queens this season at 60c each, \$7.00 per dozen. Safe arrival guaranteed.

W. W. Talley, Rt. 4, Greenville, Ala.

QUEENS, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, \$8.00; Select, \$1.00 each; dozen, \$10. Tested Queens, \$1.25; dozen, \$12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

PHELPS' Golden Italian Bees are hustlers.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, \$1.00 each; Tested, \$2.00; Breeders, \$5.00 and \$10.00. 2 Attn J. B. Brockwell, Barnetts, Va.

EARLY BEES—The last part of April I will ring north from my South Carolina yards quantity of bees. If you need bees by the pound, write for prices. Catalog of supplies and bees upon request. I. J. Stringham, Apiarist, Glen Cove, L. I. 105 Park Pl., N. Y.

GOLDEN and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, \$1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., \$1.50; Nuclei, per frame, \$1.50. C. B. Banks, Buffalo, Leon Co., Tex.

QUEENS OF QUALITY—I am booking orders for early queens now. Three-banded Italians only. Circular free.

J. I. Banks, Dowelltown, Tenn.

FOR SALE—After May 15, two carloads of Italian bees in 10-frame hives on metal spaced or Hoffman frames; new combs. Will quote prices delivered if preferred.

The J. E. Merchant Bee & Honey Co.,

Apalachicola, Fla.

ITALIAN and Carniolan Queens, the earliest and best to be had of either race. My circular and prices are free.

Grant Anderson, San Benito, Tex.

PLACE your order early to insure prompt service. Tested, \$1.25; untested, \$1.00. Italians and Goldens. John W. Pharr, Bercilair, Tex.

TRY my best bright yellow queens. They are beautiful and good honey "getters"; 60c each or \$7.00 per dozen. Safe arrival and satisfaction guaranteed. M. Bates,

Rt. 4, Greenville, Ala.

NOTICE—R. A. Shults will sell Italian queens in the season of 1915. Untested, \$1.00. After June 1, 75c; tested, \$1.50; select tested, \$2.00. Breeders, \$5.00. Bred from Moore and Doolittle stock. R. A. Shults, R. F. D. 3, Cosby, Tenn.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; Tested, \$3.00; Breeders, \$5.00 and \$10. C. W. Phelps & Son, 3 Wilcox St., Binghamton, N. Y.

I CAN supply you with Golden or three-banded Italian queens. Tested, \$1.00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, \$1.25; Nuclei per frame, \$1.25. Write for prices on large orders. Everything guaranteed. I. N. Bankston, Buffalo, Tex.

FROM SOUTHERN NEW MEXICO—My yards will be able to furnish you bees by the pound at an early date. No disease. Satisfaction must be yours. Write at once. I can surprise you on prices. Established in 1914. S. Mason, Hatch, New Mexico.

CALIFORNIA QUEENS. Nuclei and Bees bred from the best Doolittle stock, ready for shipment at once. Queens, untested, 75c; dozen, \$8.00. Tested, \$1.25; dozen, \$12. Mismated, one year old, 50c; dozen, \$5.00. Tested, one year old, 75c; dozen, \$8.00. Nuclei, 2-frame, \$1.50; 3-frame, \$2.25; 5-frame, \$3.00; 10-frame colony, \$4.50. Bees by pound, $\frac{1}{2}$ lb., 75c; one lb., \$1.00. Add prices of queens desired to all above prices of bees and nuclei. Delivery guaranteed. No disease. Spencer Apiaries Co., Nordhoff, Calif.

WANTED—To send our list to you of our famous honey gathering and almost non-swarming strain of Golden queens. No better bees of any strain to be found. One fr. untested, \$1.00; 6 for \$5.00; 12 for \$10.00. Write us what you want.

T. S. Hall,

Talking Rock, Ga.

FOR SALE—After May 15, two thousand pounds of Italian bees in any size package with or without queens. Any size order accepted. Write for our circular on prices of bees and queens. Our queens are Island bred, and pure mating guaranteed.

The J. E. Merchant Bee & Honey Co., Apalachicola, Fla.

FOR SALE—Attention! Southern Beekeepers. I have the agency for Weed Process Foundation, made by a famous manufacturer. Can make attractive prices, I pay freight to your station anywhere in Louisiana in 100 pound lots. Am paying 28c cash or 30c in trade for good wax delivered here. J. F. Archdekin. Big Bend, La.

500 SAMPLE QUEENS at 40c on first 500 orders. Moore's Strain Leather Colored Italians. Write for particulars and prices in quantity. April and May orders booked now on 10 percent deposit. Orders filled promptly or notice given when such deliveries can be made. Regular prices: Untested queen, 75c; six, \$4.25; twelve, \$8.00. Timberline Rigs, breeder. Ogden Bee & Honey Co., Ogden, Utah.

"A GUIDE POST"—A guide post that directs to a big honey crop is good queens. We have them, untested goldens or three-band Italians, \$1.00 each; \$4.25 for six; \$8.00 per dozen. Lots of 100 or more, 60c each. Tested queens, \$1.50 each. Best breeders, \$5.00 each; full 8-frame single story colonies, \$5.00 each. Safe arrival and good satisfaction. Best new crop orange blossom extracted honey; fine indeed. Write for prices. Rialto Honey Co., Box 73, Rialto, Calif.

I WILL again sell bees and queens shipped from north Louisiana in April. In cases, 1 pound, \$1.50; 2 pounds, \$2.50. In nuclei, 2 comb, \$2.75; 3 comb, \$3.75. Six or more at one time to one address 5 percent discount. 10x4 or young Italian queens for business; \$1.00 extra. Queens only at \$1.25. Shipments will be put up by experts under my personal supervision. I will try to please. A receipt in good condition will be taken. Part payment will secure the order. Bees shipped from Jonesville and Black River, La. H. C. Ahlers, West Bend, Wis.

PURE THREE-BANDED Italian Queens ready from May 1, 1915, and furnished till Nov. Booking orders now for queens to be sent later at any time between dates named above. I will refer you to Mr. J. S. Ward, State Inspector, as to the health of my queens and my method of rearing the same and their working qualities. Satisfaction and safe delivery guaranteed to you. Unt. queen, 75c each; 6 for \$4.00; 12 for \$7.50. Sel. unt. \$1.00 each; 6 for \$5.00; 12 for \$10.00. Tested, \$1.50 each. Sel. tested, \$2.50. Breeders, \$5.00 and \$10.00 each. Write for 50 and 100 rates or over to Curd Walker, Queen Breeder, Jellico, Tenn.

GRAY CAUCASIANS—Their superior qualities are early breeding; great honey gatherers; cap beautifully white; very prolific; very gentle; great comb builders; not much inclined to swarm; give better body to honey; not much inclined to rob; very hardy; never furious; good winterers; everywhere the best all-purposed bee. Give me a trial order for a queen or nucleus. Prices on application. J. J. Wilder, Cordele, Ga.

MOORE'S STRAIN and Golden Italian queens. Untested, one, \$1.00; 6, \$5.00; 12, \$9.00; 50, \$35. Carniolan, Banat and Caucasian queens. Untested, one, \$1.25; 6, \$6.00; 12, \$10. Tested, any kind, one, \$1.50; 6, \$8.00. Choice breeding queens of any kind, \$5.00 each. Nuclei, 2-frame, \$2.50; 3-frame, \$3.25; 10-frame, full colony, \$5.00. Bees by the pound, \$1.25. Add price of queens desired to all above nuclei and bees. Comb foundation, Circular free. Genuine orange blossom and mountain sage honey, one gallon can, \$1.20; five gallon can, \$5.50; case, two five gallon cans, \$10. Samples, 10c each. Everything securely packed or crated and delivered at Orange depot. Safe arrival and satisfaction on everything we ship guaranteed. W. H. Rails, Orange, Calif.

American Bee Journal

HONEY AND BEESWAX

FOR SALE—Fancy orange-blossom honey. Send for price list. James McKee, Riverside, Calif.

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co., 6A12t 173 S. Water St., Chicago, Ill.

FOR SALE—Extracted honey, basswood and light amber in 10-lb. pails. Can be sent by parcel post. Write for prices. E. E. Mott, Glenwood, Mich.

FOR SALE—Nice, thick, well ripened amber extracted honey; mild flavored; two 60-pound cans to a case. Single cans, 8c; by case, 7c; ten case lots, 6½c per pound. H. G. Quirin, Bellevue, Ohio.

FOR SALE—Spanish-needle, hearts-ease No. 1 light comb, \$3.00 per case; fancy, \$3.25. Mixed fall comb, \$2.50 to \$2.75 a case; 24 Danz. sections to case. Extracted, 120-lb. cases 8c per pound. W. A. Latshaw Co., Carlisle, Ind.

EXTRACTED HONEY—Best Water White and nice Amber Alfalfa in 60-lb., 30-lb., and smaller tins. State quantity you want. Special prices on ton lots or over. Several car-loads just in. Dadant & Sons, Hamilton, Ill.

SUPPLIES.

FOR SALE—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog. A. E. Burdick, Sunnyside, Wash.

BROTHER BEEKEEPERS, send for my new prices on Supplies. I can save you money. Beeswax wanted. W. D. Soper, Jackson, Mich.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., 4Atf Greenville, Tex.

LEWIS BEEWARE—Root's extractors, smokers, etc. Dadant's Comb Foundation. Large stock always on hand for prompt shipment. Western beekeepers can save money by patronizing the oldest co-operative association of beekeepers. Illustrated catalog free. The Colorado Honey Producers' Ass'n. Denver, Colo.

WANTED

WANTED—200 drawn out wired Langstroth size frames. J. B. Mason, 33 Lexington St., East Boston, Mass.

WANTED—500 to 1000 Hoffman self-spacing frames, filled with drawn comb. P. A. Spellman, Armstrong Creek, Wis.

WANTED—Family to build up an apiary and small fruit orchard. When not busy with bees and small fruit can have employment in orchard, garden, on farm. Give reference and state particularly experience with bees. Box 715, McCook, Nebr.

POULTRY

FOR SALE—Wild Mallard Duck—12 eggs. \$3.00 Ashmead, Williamson, N. Y.

SITUATIONS.

I WILL work bees on shares or for salary. Would want 150 colonies at least. 25 years experience. Understand bee diseases. Orie N. Britton, Hudson, Mich.

WANTED—Situation by a young man as student; no bad habits; a willing worker. Wages no object. Will Loge, 540 Herman St., Milwaukee, Wis.

WANTED—Man to work eight months caring for ten acres of potatoes and garden. Begin April. Name salary. Give experience. No booze fighter, dope or cigarette fiend wanted. Big Horn Apiary, Rt 1 R.F.D., Hardin, Big Horn Co., Mont.

FOR SALE

WHITE SWFET CLOVER, machine cleaned unhulled seed \$4.80 bushel; hulled seed, \$13.50 bushel. Wesley Foster, Boulder, Colo.

FOR SALE—40 lots in Elk City, Okla., ½ in orchard and vineyard. Price, \$50 per lot. Rev. F. W. Knappe, Alta Vista, Iowa.

PANGBURN wants you to write for illustrated circular describing his new foundation fastener, the fastest, easiest handled machine on the market. Invented and mfg. by W. S. Pangburn, Center Junction, Iowa.

FOR SALE OR EXCHANGE for honey or bee-supplies, 1912 8 H. P. American twin cylinder motor cycle. Cost \$240. What's your offer? Emil E. Nelson, Route 2, Renville, Minn.

MISCELLANEOUS

How many people are there who really know what good Queen Bees are? We suspect that thousands of beekeepers know, so we claim to know, and can sell good queens to all who wish them. The well known three-bands and Goldens. Untested, \$1.00 each; \$4.25 for six; \$8.00 per dozen. Tested, \$1.50 each. Full eight-frame hives with untested queens, \$5.00 each. Bees in pound packages, \$1.25 f. o. b. Riverside. Promptness and honest treatment, and of course satisfaction and safe arrival. Do not return dead queens to us; just state it on a postal, and we will return one at once. Golden Rule Bee Co., Riverside, Calif.

CARNIOLAN QUEENS

in season. Orders booked now for queens and bees by the pound. A few 8-frame colonies for April delivery. Price \$0.00 f. o. b. here.

Ask for our Paper "Superiority of the Carniolan Bee". It's free. Get acquainted with the merits of these bees before placing your orders. Carniolans stand cold winters best, breed up fast in spring, are very gentle, and the best of honey-gatherers.

ALBERT G. HANN, CLINTON, N. J.

Get the Atchley Queens

It took 30 years to produce the good qualities obtained in this strain of three banded bees. If you haven't some of this stock in your apiary now, you will have, some day.

Untested, \$1.00 each, or \$10.00 a dozen. After April 15, 75c each, or \$8.00 a dozen. Good tested ones \$1.50 each. I can sell you bees or nuclei cheap; write for prices. Satisfaction of all bees and queens guaranteed. Wm. Atchley, Mathis, San Patricio Co., Texas.

CLOSING OUT SALE

OF BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make reduced prices, all postpaid:

"Langstroth on the Honey-Bee" (Latest edition, \$1.20)	\$1.00
"Songs of Beesong" (10 bee-songs—25c)	.15
"Honey-Money Stories" (25c)	.15
"Pearce's Method of Beekeeping" (50c)	.30
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.30
Muth Bee-Veil (75c)	.60
Danzenbaker Bee-Smoker (\$1.00)	.80
	\$3.60

Or all the above in one order to one address for only \$3.00. (The retail price of the bunch is \$4.95.) Address,

GEORGE W. YORK, SANDPOINT, IDAHO

SWEET CLOVER SEED

FOR BEEKEEPERS

We have on hand a supply of Sweet-clover Seed which we offer for sale at the following prices as long as our present stock lasts:

	1 lb.	10 lbs.	25 lbs.	100 lbs.
White Sweet Clover (unhulled, hand screened)	20c	\$1.80	\$4.00	\$15.00
" " (unhulled, recleaned)	25c	2.25	5.00	18.00
" " (hulled, recleaned)	35c	3.00	6.75	25.00
Yellow " " (hulled, recleaned) M. officinalis	25c	2.30	5.50	20.00
Alsike Clover Seed	25c	2.25	5.00	19.00

SPECIAL PRICES ON LARGE QUANTITIES

The recleaned seed is machine cleaned, and is free from chaff, dirt, and light seed. All seed f. o. b. Hamilton, Keokuk or Iowa at the above prices. No charge for bags.

DADANT & SONS, HAMILTON, ILLINOIS

YELLOW SWEET CLOVER—Many people fail to recognize the value of Yellow Sweet Clover as a honey plant. The fact that it blooms two weeks earlier than the White variety makes it especially valuable to the beekeeper. Be sure however, to get the *Melilotus officinalis* as quoted above.

American Bee Journal

HONEY AND BEESWAX~

CHICAGO, Feb. 11.—The market on comb honey is quite strong at 17@18c per pound for the best grades of white comb. The ambers range at from 13@15c per pound. The volume of trade is not large, but there is no surplus of stock. That which is candied or out of condition is sold at whatever the opportunity offers. Extracted is still plentiful and the prices are easy on all grades with the exception of clover and basswood, which ranges at about 6c per pound, with something fancy in a small way at 10c per pound. Amber grades sell at from 7@8c per pound if suitable for table use, but carload quantities are easily bought at 6c per pound. Beeswax is steady at 30c per pound where it is of good color and free from sediment.

R. A. BURNETT & CO.

KANSAS CITY, Mo., Feb. 10.—There is very little change in our honey market since our last quotations. The supply of comb is not large, and the demand only fair. The supply of extracted is large, the demand light. We quote: No. 1 white comb honey, 24-section cases, \$3.25 to \$3.50; No. 2, \$2.75 to \$3.00. No. 1 amber, \$3.00; No. 2, \$2.50 to \$2.75. Extracted, white, per pound, 7@8c; amber ranges according to quality and quantity from 5@7c. Beeswax is quoted at 28c a pound for No. 1, and No. 2 at 25c a pound.

C. C. CLEMONS PRODUCE COMPANY.

BOSTON, Feb. 15.—Comb honey is moving slowly. Mostly western, 15@17c. Califor-

nia amber, extracted, 8@9c; white, 10@10½c.

BLAKE-LEE COMPANY.

INDIANAPOLIS, Feb. 12.—The market for extracted honey is brisk, especially so for white clover and California sage. The demand for comb honey is hardly satisfactory. We quote No. 1 choice white comb at \$3.50 to \$4.00 per case. Fancy amber at \$3.60. White clover and California sage extracted in 60-pound cans, 10@11c. We are paying 28c cash or 3c in trade for pure average wax delivered here.

WALTER S. PODER,

CINCINNATI, Feb. 12.—The demand for comb and extracted honey is somewhat improved, and conditions in general look more favorable. Comb honey is selling at \$3.50 to \$4.00 per case. Amber extracted honey from 5@7c a pound, according to the quantity and quality purchased. For strictly fancy white clover extracted honey 10c a pound in crates of two 60-pound cans. We are paying 30c a pound delivered here for choice bright yellow beeswax, or 32c a pound delivered here in exchange for supplies.

THE FRED W. MUTH CO.

DENVER, Feb. 12.—We have a small supply of comb honey again, which is being offered at the following jobbing prices: Fancy white, \$3.15 per case of 24 sections; No. 1, \$3.00 per case, and No. 2 at \$2.85. There is a fair demand for strictly first-class white extracted honey. Our local jobbing prices are

8@8½c for white; 8@8½c for light amber, and 7@8c for amber strained. We buy beeswax and pay 28c in cash and 30c in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, Mgr.

NEW YORK, Feb. 18.—There is very little doing in comb honey. There is some demand for No. 1 white stock, which is selling at around 11@12c per pound, while off grades are pretty well cleaned up at this time. As to extracted, the demand is only fair, and mostly for choice grades of which there is not an overstock, with prices ruling from 8@9c per pound, according to quality. Large quantities from the West Indies have been and are arriving at this market, and prices on these grades are ruling very low, and we can see no indication for any improvement for the time being. Beeswax is quiet, selling at from 28@30c per pound according to quality.

HILDRETH & SEGELKEN.

STANDARD DOVETAILED HIVES shipped direct from factory in Iowa. Fine 8 frame for \$6.00. Hoffman frames, \$2.75 per hundred. Plain sections, \$4.20 per M. Write for prices on what you need—a full line.

The Stover Apiaries, Mayhew, Miss.

BUCKEYE CHAFF HIVES DOVETAILED HIVES

**Sections, Comb Foundation
Choice Northern-Bred Italian Queens
Bees by the pound
General Agents for Root's Goods in Michigan
SEND FOR 1915 CATALOG
M. H. HUNT & SON
Lansing, Mich.**

Beekeepers' Supplies

Write us for our 64-page catalog. FREE. Full information given to all inquiries. Let us hear from you. We handle the best make of supplies for the beekeeper. Beeswax exchanged for supplies or cash.

J. NEBEL & SON SUPPLY CO.,
High Hill, Montg. Co., Mo.

We Have Decided

Not to change the prices for 1915, and will not mail new catalogs to our customers unless we are requested. Order from last catalog. Send us list of goods wanted for best prices. No one can beat us. We have been in business since 1899. Reference, any mercantile agency.

H. S. DUBY & SON, St. Anne, Ill.

DO YOU READ THE

Progressive Poultry Journal?

If not, send for a Sample Copy. An up-to-date poultry paper. Every Beekeeper should keep Poultry. Write for advertising rates.

Progressive Poultry Journal Publishing Co.,
MITCHELL, SOUTH DAKOTA

CANADIAN BEEKEEPERS

All kinds of Canadian made & American Bee Supplies. Root's, Dadant's & Canadian Comb Foundation, Friction-drive Extractors and Gasoline Engines. Catalog Free.

THE ROOT CANADIAN HOUSE,
183 Wright Ave. Toronto, Ontario.

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado



Untested Italian Queens

For a number of years we have been furnishing Italian queens to our customers, and their words of encouragement have led us to believe that our services are appreciated. Being in touch with many large breeders, we are in a position to furnish untested queens of first quality with but little delay. We can furnish either ordinary leather-colored or bright yellow queens as preferred. Prices as follows:

BEFORE JULY 1.

1 untested.....	\$ 1.25	Tested Queens
6 " "	5.50	\$1.75 each
12 " "	10.00	

AFTER JULY 1.

1 untested.....	\$ 1.00	Tested Queens
6 " "	4.50	\$1.50 each.
12 " "	8.50	

Special prices on larger lots on application.

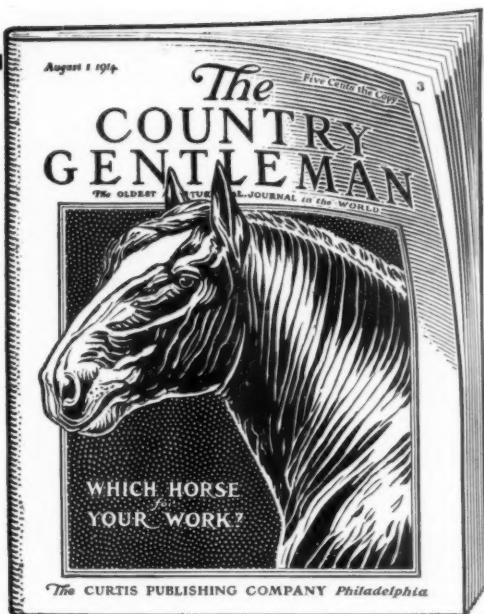
Caucasian Queens

There has been much inquiry for this race of bees. We can fill orders for these queens at the same rates as above.

As an introductory offer, we will send you an untested Queen together with a year's subscription to the American Bee Journal for only \$1.50 (10 cents extra to Canada). Add 50 cents if Tested Queen is wanted. We also can furnish nuclei, bees by the pound and full colonies. Prices on request.

Orders are booked as soon as received and filled in rotation. When ordering, however, state approximate date on which you wish queens to come forward, so that we may fill accordingly. Purity and safe arrival guaranteed.

American Bee Journal, Hamilton, Illinois.



25¢
for
**THREE
MONTHS**

To put the big \$1.50 national farm weekly at once into half a million farm homes, the next 13 issues of *THE COUNTRY GENTLEMAN* will be mailed to your address for 25 cents—less than two cents a copy!

60% of the Apple Crop Never Reaches Market.

Are You Wasting Half Your Fruit?

Bad selling methods and poor quality are the causes of this enormous waste. The 1914 apple crop was the largest ever produced, 259,000,000 bushels, and less than 40 per cent of the crop will be sold. Yet thousands of consumers would like to get good apples. That is why quality and packing are paramount questions discussed in every issue of our journal.

The Biggest Poultry Profits Are Made In Three Ways:

1, breeding high layers; 2, hatching baby chicks, and 3, fattening dual-purpose breeds. We sent the most expert poultryman we could find on a long trip through the great poultry states to visit practical plants and discover how the profit-paying plants are run. He got the facts. His observations and advice will appear in a number of special articles.

Do you know when the market is best for your class of stock? To the dairyman, hog raiser, horseman, sheepman, feeder and breeder there is no more important question. It will be thoroughly discussed by a competent man and illustrated by charts. It may save you \$100—possibly more. The war made some feeds cheap. Are you using them? Read the opinions of leading breeders on the prospects for the breeds.

Ask Us Your Hard Questions

Our expert advisers will answer any question you send us. They will plan your orchard; suggest varieties, cover crops, fertilizers, spraying mixtures, methods of cultivation; tell you how to harvest, select, pack, ship, store and sell profitably. All inquiries will be answered promptly by mail.

You will also be helped by the scores of articles on general farming, gardening, beekeeping, livestock, poultry, etc., by making immediate use of this coupon.

***The COUNTRY
GENTLEMAN***

THE CURTIS PUBLISHING COMPANY, Box 539, Philadelphia
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Mail to us now
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PASTE
25¢
HERE
(In Canada
50c.)

THE BEST TIME TO BUY SUPPLIES

The season just passed has demonstrated more clearly than ever the necessity for being prepared for a honey-flow **before** it comes. If you wait until the season is upon you, the chances are that the greater part of the crop will be lost while you are impatiently waiting for supplies to arrive. It may seem a little early now to think of next season's honey harvest; but the fact of the matter is, this is just the time to order goods for next season.

We are beginning now to replenish our stocks. We shall soon have carload orders coming from the factory. Special orders placed now can have just the attention they need, both here and at the factory, and you may have your goods sent in one of our cars, thereby saving on transportation charges. Regular stock will come straight to you from our warehouse in new unbroken packages, and you can put the goods together in your odd minutes, thereby saving the expense of extra help in the spring.

Our usual discounts for early orders apply again this season—5 percent for cash orders sent in November, the discount lessening one percent per month as the season advances. These discounts mean a considerable saving, and you might as well take advantage of the highest by ordering now. No change of prices has as yet been announced, and you may, therefore, order from your present catalog. If your catalog has been mislaid, write us at once and we will send another.

C. H. W. WEBER & CO.,
2146 Central Avenue, **Cincinnati, Ohio**

Where the Dovetailed Hives are Made

Three floors of one of our buildings are devoted to making hives, sections frames, supers, shipping cases, queen-cages, nucleus boxes, and all other articles made of wood. A glimpse of one of these floors is given in the accompanying illustration.

Here are located the many and often complicated machines and appliances, most of which were designed and built especially for us and each one of which makes but a small part of the hive. Visitors have often expressed surprise that so small an object as a section honey box, for instance, should require so much handling and pass through so many hands until the final product is ready for shipment.

There are probably few beekeepers who have any idea how the dovetailed hive is made, and who realize that,

"ROOT'S GOODS" have, indeed, become a synonym for perfect workmanship and the best materials, and are known in every civilized country of the world.

Our 1915 catalog (the largest we have ever published) is now ready for distribution, and will be promptly mailed postpaid, on request. (Large stocks at our branches.)

THE A. I. ROOT COMPANY, Executive Offices and Factory, MEDINA, OHIO
Branch Offices

New York, 139-141 Franklin St.
Philadelphia, 8-10 Vine St.
Chicago, 215 West Ohio St.
St. Paul, 850 Payne Ave.

San Francisco, 58 Sutter St.
Des Moines, 915-917 Walnut St.
Syracuse, 1631 West Genesee St.
Indianapolis, 859 Massachusetts Ave.

Zanesville, Ohio.
Mechanic Falls, Maine.
Washington, 1100 Maryland Ave., S. W.
Los Angeles, Calif., 948 E. Second St.



A Corner of One of the Floors Devoted
to Woodworking

first of all, the lumber must be carefully selected and seasoned, then cut into the right lengths, passed through the machines which dovetail the sides and ends; through other machines where they are fitted together; nailed and sandpapered; provided with rabbits in the interior, etc., etc.; while at the same time the bottom-board and the cover is made in another part of the factory, each one of which requires similar handling. The various parts of the hive are then sent to the assembling room, where they are put together, and finally to the packing room, where they are packed in such a manner as to occupy the least possible space (thus reducing the cost of transportation to a minimum), and shipped to all parts of the globe.

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American Bee Journal

MARSHFIELD GOODS

BEE KEEPERS :—

We manufacture Millions of **Sections** every year that are as good as the best. The **CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**

Our Catalog is free for the asking.

Marshfield Mfg. Co.,

Marshfield, Wis.



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